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Greater Authority for Regions?

WHEN Sir Eustace Missenden, the first Chairman of the Railway Executive, contributed an article to our columns in April, 1950, dealing with the first two years of British Railways, he explained why it had been considered desirable to have a centralised organisation. He also looked forward, however, to the time when the greatest devolution of responsibility in some spheres from the central Railway Executive to the Regions would be possible. He appreciated that it was not decentralisation to have Regions if all decisions had to be made at headquarters and if officers in the Regions were merely intermediaries in passing them to lower levels to carry out. Recently, there have been signs of a greater devolution of responsibility to the Chief Regional Officers, and there is reason to believe that it is the policy of the Railway Executive increasingly to place power and authority with the Regions. In our view, this is highly desirable if flexibility in operation, stimulation of initiative and quickness of decision—all essential to the well-being of the railway service—are to be revived and encouraged. Recently, the maximum amount which a Chief Regional Officer is authorised to spend on any one item of works has been raised from £2,000 to £5,000. In part, this has been made necessary by increased prices and it still does not put the Chief Regional Officer in the same position as to speed of decision on expenditure as one of the old General Managers. The latter had at hand the Chairman of the company, who could agree a proposed expenditure almost instantly, and be in a position to ensure its acceptance by the board. Nevertheless, the step is in the right direction. Another indication of the change of emphasis towards the Regions is to be found in the new winter train service cuts, which have been based on the recommendations of the Chief Regional Officers. There is even ground for hope that in due time the Chief Regional Officer will emerge as something much closer to the railway conception of a Regional Manager.

Passenger Charges Scheme Inquiry

SINCE the draft Passenger Charges Scheme, 1951, designed to yield in a full year additional revenue of £17 million, was submitted to the Transport Tribunal by the British Transport Commission last April, costs have continued to rise, and before any approved scheme can come into operation they will be higher still. Sir Malcolm Trustram Eve, K.C., presenting the case for the B.T.C. at the opening of the inquiry this week in London, points out that the deficit of £40 million would be £50 million by the end of the year, and the problem was to turn this deficit into a surplus of £50 million; "otherwise there would be perpetual applications to the Tribunal." From 1948 to the first quarter of 1951, identifiable increases in costs had totalled £58½ million, or an average of £17½ million a year, while more numerous smaller increases brought the total to about £75 million. As to the two increases in freight charges—first by 16⅔ per cent. and then by 10 per cent.—Sir Trustram Eve maintained that it was only right that passengers should contribute their share. He also stressed the necessity for an adequate general reserve. Our report of the inquiry commences on other pages this week.

Overseas Markets for British Locomotives

SINCE the war everything has been done by the British locomotive industry to achieve an increasingly high level of exports and efforts in this direction have been attended by a substantial measure of success. The following table, concerning main-line locomotives, reveals a continuous increase in overseas demands, though a part of this expansion must be attributed to inflation of prices.

VALUE OF MAIN-LINE LOCOMOTIVE EXPORTS

	1938	1945	1947	1950	1951*
	£	£	£	£	£
Union of South Africa	390,038	1,110,880	3,685,437	103,126	420,855
India	119,913	14,670	712,734	3,024,535	2,901,057
Other British countries	440,395	242,000	802,815	3,217,562	4,666,312
Egypt	180,063	—	—	—	26,436
Argentina	261,794	—	—	312,312	—
Other foreign countries	185,370	32,259	216,621	1,401,405	1,633,101
Total	1,577,573	1,399,809	5,417,607	8,058,940	9,647,761

* 1951—First eight months expressed as an annual rate

There were, inevitably, heavy civilian arrears to overtake at first, but the position is very different now, when formidable difficulties have to be faced. These were referred to in *The Financial Times* of October 9, in an article prepared in collaboration with Mr. W. D. Lorimer, President, Mr. J. W. Vaughan, Director, and Mr. K. Cantlie, Overseas Representative, Locomotive Manufacturers' Association. Included among the present problems are increasing competition abroad, the threatened growth of locomotive building in certain countries, and the buying out of railways formerly British owned. Nevertheless, the assumption is made that, given some degree of stability, additional railway prospects may be expected both in territories currently progressive and in backward countries, thus creating a new demand for locomotives.

Railway Carriage and Wagon Exports

SIMILARLY, the railway carriage and wagon building industry is making persistent efforts not merely to maintain its present important position in international trade, but by increased efficiency and productive effort is seeking to expand its exports. During the past five years the total value of exports has exceeded £40 million. Here, again, after the peak demand for rolling stock in the immediate post-war years, increasing competition has been encountered from European and Japanese builders in the overseas markets. Some countries which previously imported the bulk of their rolling stock are also expanding

their own manufacturing facilities. Steel construction has been almost universally adopted for wagons for this country and overseas, and Sir Archibald Boyd, Managing Director of the Metropolitan-Cammell Carriage & Wagon Co. Ltd., expresses the hope that, bearing in mind the important part played by rolling stock in the transport of men and materials, sufficient supplies of steel will become available under the new distribution scheme which will come into operation in December, and that the industry will thereby be in a position to maintain its very substantial contribution to the export trade as well as to essential requirements at home.

The G.N.R.(I.): A New Offer?

AS a result of the protracted negotiations between the Great Northern Railway (Ireland) and the Governments of the Six and Twenty-six Counties it is now clear that the stockholders may achieve a substantial improvement on the originally proposed purchase price for the undertaking. After a meeting on October 1 between the directors and the Belfast Minister of Commerce and the Dublin Minister of Industry & Commerce, the Board issued a statement to stockholders saying it had "reason to believe that a proposal involving a sum of more than £4,500,000 would not be considered by the Ministers," implying that a figure of this amount might be approved by the Governments as payment for jointly acquiring the system. The Ministers informed the directors that while they intended to proceed by legislation compulsorily to acquire the company for £3,900,000, they "would have greatly preferred to proceed on a basis of agreement"; they would still be prepared to recommend to their governments acceptance of any proposal by the stockholders "for a voluntary sale on slightly more favourable terms." The Ministers' alternative to a voluntary sale is compulsory acquisition on the terms already offered.

Arbitration Ruled Out

IF the Governments agreed to a figure of £4,500,000—15 per cent. more than the original "offer"—the various classes of security holders would receive the following approximate compensation terms, assuming that the larger amount were applied *pro rata*:—

Stock	Basis	
	£4·5 million (approximately)	£3·9 million
4 per cent. debenture	94	81⅝
4 per cent. guaranteed	70	61
4 per cent. preference	36	31¼
ordinary	24	20¾

Arbitration, which the stockholders urged should be the main representation by the directors on their behalf, has been rejected on the grounds that the Governments are in effect arbitrators between the interests of the stockholders and the public. The Ministers contend that the acquisition has been forced on the Governments by the company's financial position and that terms of reference for arbitration would be almost impossible to agree between the parties. They are prepared to justify the adoption of Stock Exchange quotations as a basis of valuation, although its unfairness has repeatedly been made plain by the company. It remains for the views of the general body of the stockholders to be sought.

Improvements in Steel Productivity

THE first team to visit the U.S.A. under the auspices of the Anglo-American Council on Productivity was supplied by the British steelfounding industry early in 1949, and its report was issued in the autumn of that year. This week, the B.S.F.A. also has published a report, showing the steps taken by this industry to put into practice the recommendations of the team. Among the subjects dealt with are sales policy, design, layout, equipment and research, towards which more than half the member firms of the Association have contributed their views. Some firms, though not sufficient to justify a broad generalisation being made, have shown that they realise the importance of using machines in place of unobtainable skilled workers, while standardisation also is being applied to a greater extent, one foundry attached to an engineering works having established a section to work full-time on this problem. Many important improvements in layout have taken place, ranging from the installation of new melting shops to a general emphasis on better mechanical moulding, and the majority of firms refer to the installation of new equipment or the better use of existing plant. Reports received show that even where equipment is already satisfactory, improvement in productivity is still possible.

Italian State Railway Finances

IN these days of increasing deficits on so many State-owned railways, it is encouraging to note that for the financial year ended June 30, 1951, the Italian State Railways accounts closed with a deficit of lire 46,706 million, over 20 per cent. lower than the deficit for 1949-50, which in turn was 6 per cent. lower than for the previous year. Despite this, working expenditure reached an unprecedented level, nearly lire 220,000,000 higher than for 1949-50. Receipts for 1950-51 totalled lire 159,900 million, exceeding by lire 60,340 million the total for 1947-48, which was the last financial year before the introduction of various increases in charges. The development of traffic during the first half of the current year resulted in receipts higher by lire 8,500 million than for the comparable months of 1950. In 1946-47 and 1950-51 there was an all-round increase of 58 per cent. in the traffic on the State Railways. Despite this, there were dismissals of redundant staff amounting to some 12 per cent. of the total. Recent discussions in the Italian Parliament on the 1951-52 budget of the State Railways show that the much increased prices of coal and other materials make the rate and fare increases impending this month imperative, though the percentages of the increases are not yet known.

Reflecting Surfaces for Ground Signals

CERTAIN Continental countries, of which Germany is the leading example, make great use of point indicators and conduct their shunting with their aid instead of using shunt signals, as understood in this country. This results in considerable numbers of point lanterns being required, particularly at the larger stations where there is much dividing and re-making of trains, the cost of which is heavy. An article in *Signal und Draht* by Herr Otto Wolf describes the application of pyramidal prism-type silvered glass reflecting surfaces in place of the internally illuminated milk glass screens hitherto generally used. So successful has this proved that several large stations are now working under the new arrangements with every satisfaction and their general extension to complete divisions of line is to be taken in hand. The shunters are provided with electric hand lamps having an additional focus bulb enabling a powerful beam to be thrown at will towards the indicators, which are then more easily read than formerly, and some shunting engines have such a lamp mounted on the cab for the use of the driver. The saving in oil consumption alone is great and fully justifies the change.

New Motive Power in Victoria

WITH the delivery of new steam and diesel-electric power the Victorian Railways are scrapping some 30 old locomotives, including "A2" 4-6-0s—a class introduced in 1907—and three classes of shunting locomotives. The new locomotives received include the last of the 50 "N" class 2-8-2s and six of the 70 "R" class 4-6-4s, both constructed by the North British Locomotive Co. Ltd. and described in our December 8, 1950, and September 21, 1951, issues respectively, and the first of a batch of ten 350-h.p. diesel electrics for shunting duties which have been

built by the English Electric Co. Ltd. Conversion of existing locomotives to oil-burning is proceeding; the latest to be so equipped include the Class "S" 4-6-2s used on the "Spirit of Progress" between Melbourne and Albury. Development of the brown coalfield at Yallourn is encouraging further conversions to brown coal burning. All these developments will help to free Victoria from its dependence on imported black coal, to which the Gippsland electrification now in progress, and the planned electrification of the Melbourne-Geelong line will also materially contribute.

Modern French Steam Locomotives

DESPITE the great programme of electrification which the French National Railways are carrying out, steam and diesel motive power developments are not lagging behind. This week we publish the first instalment of a two-part article which describes post-war types of steam locomotives built for the S.N.C.F., beginning with the mixed-traffic 2-8-2s of Class "141-R," of which no fewer than 1,323 were built in Canada and the U.S.A. just after the war, and including two interesting passenger compounds, one the 4-6-4, 232-U.1—the latest—and the other the 4-8-4, 242-A.1, rebuilt from an Etat 4-8-2 simple and in its new guise the most powerful express locomotive of the S.N.C.F. From 242-A.1, standard 4-8-4, 4-6-4, 2-8-4, and 2-10-4 designs were evolved. In view of the disappearance of the 2-8-2 type in Great Britain, it is interesting to observe the great use which is made of it in France. Not only are there the North American-built compound locomotives previously mentioned but also numerous examples built in France; all work both fast and slow goods and heavy passenger trains.

Winter Freight Movement

THROUGHOUT the summer months British Railways have had in mind the necessity which must arise this winter of dealing with abnormally heavy traffics. The primary consideration which has been before them has been the need to evolve a plan which will avoid the holdups in movement which occurred last winter. The major problem that has had to be faced is the acute shortage of manpower in many key railway grades. How serious is this deficiency may be judged from an editorial article elsewhere in this issue.

The complications resulting from the holdup of traffic movements last winter continued until well into the summer. It is only comparatively recently that complete freedom of freight movement was achieved throughout the country. The onset of the autumn has given indications that difficulties of movement may speedily arise unless there is the closest co-operation between transport, agriculture, commerce and industry in dealing with freight traffic during the coming winter. Some of the exceptional measures which have been evolved by the Railway and Road Haulage Executives of the British Transport Commission in conjunction with representatives of industry and commerce are given elsewhere in this issue. It is clear that British Railways have adopted a plan which is based on measures hitherto unknown in peacetime in an endeavour to keep pace with the needs of industry and commerce.

Earlier this year, in order to obtain an assessment of traffic prospects during this winter, the Railway Executive Special Traffic Committee was constituted with the following members: Mr. W. P. Allen, Mr. V. M. Barrington-Ward and Mr. David Blee, all Members of the Railway Executive, and Mr. K. W. C. Grand, Chief Regional Officer, Western Region. This committee was given full powers to examine the freight traffic position and take measures to facilitate the movement of freight traffic during the autumn and winter. Mr. Grand was authorised to take the initiative in all Regions in the closest collaboration with the Chief Regional Officers. He was assisted by a Working Party consisting of senior representatives of the Operating, Commercial and Staff Departments.

It soon became clear that the fundamental issue was that of staff, which was the most important contributory factor to the serious interference with freight traffic which occurred last winter and which continued in some degree up to late July this year. It is estimated that the total shortage in all grades for the country as a whole is between 25,000 and 30,000 men of a total of nearly 600,000. It is also estimated that, during the thirty weeks commencing October 1, the following increases in traffics may be expected, as compared with the corresponding period 1950-51.

	Tons	Tons increase	Per cent. increase
Merchandise (Classes 7-21)	31,000,000	309,000	0·99
Minerals & merchandise (Classes 1-6) ...	35,400,000	1,472,000	4·16
Coal class	100,000,000	3,279,700	3·30

It was considered that the physical number of locomotives and wagons available should be adequate to lift all traffic offering, subject to there being no loss of programmed new building because of steel shortage or other factors and also provided that satisfactory round trip times can be secured. Various expedients have been adopted to divert traffic, either from more to less congested routes, or to other means of transport and to make full use of the combined resources of the British Transport Commission.

In each of the fifty-one railway districts a local joint committee comprising the Railway District Commercial Superintendent, the District Manager of British Road Services and representatives, as required, of the Federation of British Industries, the Chambers of Commerce, and the National Farmers' Union will examine, as the need arises, any special measures to relieve congestion. This special liaison machinery is temporary, and has been designed to reinforce the preparations which the Railway Executive and the Road Haulage Executive have made to move the maximum tonnage in the winter. Freight capacity of British Railways, measured by present ton-mile figures, is some 30 per cent. over that of 1938. It is expected that the railways will be required to lift about 5 million tons more traffic than last winter, with about 5 per cent. fewer staff.

The freight load on British Railways has been increasing constantly in recent years. It rose by 347 million ton-miles in 1949; by a further 125 millions in 1950, and in the first eight months of this year, it has shown a further advance of over 376 million ton-miles. Under pressure such as this, congestion in one marshalling yard is almost bound to have wide repercussions on traffic approaching that point.

Among the measures adopted by British Railways, as part of the special campaign to keep essential freight traffic moving, are substantial reductions in passenger trains. The average weekly mileage of booked advertised passenger-carrying trains to be run this winter is about 3.4 per cent. less than that for the winter of 1950-51, and a reduction of over 16 per cent. compared with the services operated in the winter of 1938-39. As from October 29 further reductions will be made. In all, up to 600 train-crews a day will be made available for freight traffic working through curtailment of the summer passenger timetable. Intensive weekend freight working is to be continued; by this means nearly 450,000 tons of coal has been cleared each weekend recently. Major flows of traffic are to be reorganised to make possible block loads and to avoid intermediate marshalling yards. Widespread rearrangements of engine and train-crew workings are being made so as to transfer duties from depots particularly short of staff. Heavy freight engines are being brought down from the North-Eastern and Scottish Regions to more southerly points to enable heavier trains to be worked.

With all the preparations which have been made, it is clear that a good deal must still depend on such factors as the weather, the incidence of epidemics and the willingness of all parties to co-operate in ensuring fluidity of movement. On the whole, however, it would appear reasonable to suppose that, unless weather conditions are particularly severe and if sickness and absenteeism are no worse than normal, the difficulties on the railways should not affect more than a small percentage of the total traffic carried, and then only over certain groups. Perhaps the London and

Birmingham areas are the most vulnerable because of the large volume of traffic involved. Special measures, however, have been taken in those districts. The preparations which have been made for this winter's transport represent a combined operation, the progress of which will provide a good deal of data as to the usefulness of methods of this kind. There can be no doubt of the gravity of the problem which faces transport this winter, nor of the extensiveness of the endeavours which have been made to obviate some of the more obvious perils.

British Railways Manpower

THE fact that Ministers of the present Government met specially last week during their election campaign, as recorded elsewhere in this issue, to consider the problem of railway manpower in relation to British Railways ability to move freight during the coming winter, shows the concern with which this subject is regarded. Some forecast of the situation was known to the Government weeks ago, when the deferment of national service for railwaymen was one of the palliatives considered, but no Government announcement has resulted. Whilst the manpower shortage in certain key operating and civil engineering grades is serious, it must be considered in true perspective and regard paid to factors such as trends in increases and decreases in different grades, local shortages, availability of housing, traffic flows and so on.

As regards footplate grades, the total number of drivers, firemen, and motormen on British Railways fell from 94,800 in March to 92,400 in December, 1950, thence to 89,900 in March of this year, since when it has remained at the 90,000 level. Whether it will fall further is problematical; much wastage has been among young firemen who do not rejoin the railways after national service, and their failure to do so depends on the availability of more attractive work which may be enhanced by rearmament—at a season when outdoor railway work is least attractive. Of other key operating grades, the total of goods guards, signalmen, and goods shunters in March and December, 1950, and in March, 1951, were respectively 63,800, 61,500, and 60,000, and it has been estimated that the number must have decreased by now to 59,600. In civil engineering staff, the total loss of conciliation and workshop grades between nationalisation in January, 1948, and March, 1951, was 13,900; at this rate, the loss by March, 1952, would be 19,000 men, or 23 per cent. of the strength in January, 1948. Shortage of permanent way staff necessitated 14 speed restrictions in June, 1950, which rose to 48 by June, 1951. At the same rate of loss, it has been estimated that 70 speed restrictions would be necessary throughout this autumn and winter, with serious consequences in goods traffic movement.

There is also a shortage of signal and telecommunications conciliation and workshop staff; the net wastage from nationalisation to August last was nearly 1,000 men, and it is estimated that this will grow by next March to 1,400, or 12 per cent. of the previous establishment. Signal and telecommunications and some freight operating grades other than footplate men are particularly susceptible to the attractions of outside industry. It is too early to say to what extent the situation can be affected by the outcome of the railway unions' demand for a wage increase, about to go before the Railway Staff National Tribunal.

The total shortage of railway staff is assessed at 25,000, of which some 15,000 are in key operating grades. This may seem small compared with British Railways total of 600,000 employees, but the incidence of loss is not evenly spread, and is often most acute where the need for labour is greatest. The shortages occur in many grades and subgrades, and are local, which means that they are aggravated by lack of housing and other factors. The total shortage of enginemen, for instance, is assessed at 4,500, against the total of 90,000.

In certain industrial areas, such as that around Birmingham in the London Midland Region, where attractive employment is easily found, are particularly bad as regards both wastage in railway employment and recruitment to railway service. The situation, moreover, of some goods traffic centres or interchange points at places which are either, such as Banbury, not themselves large towns, or towns, such as Oxford, where accommodation is particularly hard to get, is an aggravating factor.

In the face of these difficulties, the Working Party appointed last June by the Railway Executive Special Traffic Committee has examined various remedies. The first of these is deferment of military service, which has been advocated by this journal for some time, if only as a palliative, and was discussed in our August 10 issue. Representations in favour of deferment, with suggestions for alternative training of conscripts whilst serving on the railway, were made, as stated above, to the Government some time ago. Although only some 3,000 youths are affected at any one time, key operating grades such as firemen are involved, and an early and favourable decision would be an invaluable contribution to the solution of present difficulties.

The question of lodging turns has been under discussion since the agreement in February last, by the Special Joint Committee of Railway Executive and trade union delegates, without much tangible result so far, but pending agreement on the general issue, certain measures have been considered such as small increases in payments for turns worked, and appeals by Chief Regional Officers for volunteers to work such turns. During the summer, certain proposals, detailed in our July 20 issue, were agreed on by the Executive and the unions to alleviate the manpower shortage; they include working by volunteers of a 48-hr. week in certain instances and the forgoing of one week's annual leave; steps are being taken to implement these proposals, though the Associated Society of Locomotive Engineers & Firemen is not prepared to accept them pending a decision on deferment, which it considers more important.

Besides measures for making better use of existing staff, the Railway Executive also has examined the sources and methods of recruitment. Additional sources include Ireland and Italy. Irish labour is to some extent susceptible to the attractions of competing employment in Britain; the difficulty with Italian labour is that of housing, which, however, is being overcome by provision of special accommodation and the first 500 men are expected in November. Efforts are being made to recruit staff in districts, such as parts of Scotland, where there is an appreciable amount of unemployment. The Ministry of Labour & National Service is co-operating locally with Regional railway representatives, and has added vacancies in operating and motive power grades to the "first preference" list.

To assist recruitment of railway staff for the Birmingham and London districts from easier areas, recruits in these districts are being assisted, as an experimental measure, to pay for their lodgings. Other recruiting measures now in force or about to be taken include advertising in trains and on railway sites, bonus payments to railway staff introducing recruits in certain areas, as recorded in this journal, for an experimental period up to the end of this month, visits to schools with talks and film shows on railway subjects for children of school-leaving age, and some relaxation of the visual standard for new entrants where no question of safety in operating is involved.

Other steps to alleviate the situation include overtime work where this is needed, as in handling goods traffic or on tip gang work in the civil engineering department, by volunteers not required to work overtime in their own departments; and the contacting of staff performing their national service with a view to their return to the railways. Appeals through staff negotiating machinery for operating grades to work their rest days when the situation demands have met with a generally satisfactory response, though enginemen in some places have refused—largely influenced by the A.S.L.E.F. attitude on deferment. In addition, the question of absenteeism by trainmen at weekends is being closely studied. Finally, lists of lodgings and Ministry of Labour hostels for recruits or transferees are being pre-

pared, and in areas of acute labour shortage the erection or extension of British Railways hostels is being examined and put in hand as quickly as possible.

There must be a continued strain on existing staff in operating grades pending an improvement in the situation, and this may in turn cause further sickness. It appears clear, however, that remedial measures both in force and under review are far-reaching, and the staff situation, although by no means satisfactory, is still well under control.

New Rates in East Africa

THE East African Railways & Harbours are one of the few administrations which have managed until now to maintain pre-war rates and charges. Every means of improving operating efficiency was made, enabling the great increase in traffic which has been a marked feature of the post-war development of the system to be handled without passing the rising costs of operation on to the public. This could obviously not go on indefinitely; it was essential to increase revenue to offset in some measure the soaring cost of equipment—a locomotive costing under £20,000 in 1939 now costs over £50,000, and the cost of a covered wagon has increased from £400 to £1,200-£1,300—if facilities essential to the expansion of communications in East Africa were to be provided.

To remedy this unsatisfactory situation, a new tariff system, prepared over the last three years, was put into force on October 1. Mr. A. Dalton, General Manager, East African Railways & Harbours, has sounded the warning that a further review of the rates structure might be necessary "at no distant date"; even since the new tariff book was compiled expenses have again soared—the price of steel, for instance, has been twice increased.

The need for a new tariff was recognised when the Kenya-Uganda and Tanganyika Railways were combined on May 1, 1948, as the East African Railways & Harbours, and the new administration was charged with the duty of preparing it. To begin with, the two existing tariff systems were quite differently made up. Tanganyika still adhered to the metric system which dated from the German administration of the territory; there were ten classifications on the freight side and shorter hauls were charged at a higher level than on the Kenya-Uganda Railway. In the early days of the Uganda Railway there was little movement of internal traffic over relatively short distances; although subsequently short-haul traffic came to form a major part of the total traffic movement the rates were little amended. On the passenger side also there were anomalies in Kenya and Uganda. No other railway, it has been claimed, offered ordinary return fares at the cost of a singe-and-a-half.

The main changes are summarised in an article elsewhere in this issue. The increased passenger fares should bring in some 20 per cent. more revenue, yet the cost of new coaches has risen by over 100 per cent. First and second class fares have been little altered; in the third class there has been an increase in the fares for short-journey travel. Return fares have been more drastically dealt with—new first and second class returns now cost two single tickets less 10 per cent. In view of the need for maximum user of wagons, the demurrage charges have been increased from 10s. to 25s. per four-wheel unit for 24 consecutive hours, or part thereof.

Such a drastic change is bound to give rise at the outset to some confusion on the part of staff and public, although the administration has done its best to mitigate inconvenience, but its fairness cannot be disputed. At least there is now a more equitable relation between charges and costs, old disparities and inconsistencies have gone, and when a further revision becomes necessary, it will be a much simpler task. As it is, many of the rates are still below the level of those in the West African colonies. Not the least satisfactory feature of the new tariff is the achievement of a further stage in the integration of the two component railway systems.

Rail End Failures

WHILE the failure of rails as a result of transverse fissure defects is gradually being brought under control in the United States by the controlled cooling which is now standard practice at the steelworks, another type of failure now causing concern to maintenance of way departments is the cracking of rails at the ends, in the area concealed from view by the fishplates. It has been the subject of correspondence in a recent issue of our contemporary *Railway Engineering & Maintenance*.

On the New York Central System this type of defect did not come prominently under notice until 1947; since then the number of failures of this type has been increasing steadily. Some 85 per cent. of the cracks are horizontal, in the form of separation between the head and web of the rail; the large majority of the cracks discovered by ultrasonic electric detection methods have been less than 1 in. in length, and not more than 2 per cent. over 2 in. in length. Were it not for this timely detection these cracks might have extended progressively until a portion of the head broke away. Of actual failures of rails at the ends, the proportion of those due to cracks extending from bolt-holes to those caused by head-and-web separations has been six to one.

An Assistant Engineer of the Atchison, Topeka & Santa Fe Railway considers the primary cause of such rail-end failures to be worn fishplates. The Maintenance of Way Assistant to Vice-President, New York Central System, regards it as a disturbing feature that these failures are occurring with rails that have been in service no more than four to five years, equally with those in rails of greater age. It is curious that neither engineer mentions as a possible cause insufficient packing of ballast under joint sleepers, resulting in a pumping action of the joints under traffic which greatly increases the liability of the steel to fatigue failure. Similar troubles have been experienced in British tunnels like Woodhead, in which, with its two single-track bores, each 3 miles long, a high standard of track maintenance is extremely difficult, and the combination of moist conditions with sulphur from steam locomotive exhaust is a strong encouragement to the development of corrosion fatigue cracks.

Another possible cause, to which neither of the participants in this American correspondence refers, is the hardening of rail-ends now common in the U.S.A. with a view to reducing rail-end batter. The fact that on many railways this practice is of relatively recent introduction tallies with the information that U.S.A. rail-end failures did not begin to attain serious dimensions until 1947. Without precise temperature control and careful post-heating, the flame-hardening methods used could leave rail-ends in a brittle condition, unduly susceptible to cracking, especially when the hardening has been done *in situ*.

The Santa Fe engineer recommended that there should be a close examination of rails at joints when not more than 75,000,000 tons of traffic have passed over the track, or at shorter intervals if rail-end failures are giving trouble at any particular location. The objection is that both visual and ultrasonic detection methods are expensive; the former makes it necessary to unscrew all fishbolts, so that the fishplates may be taken off to render the rail-ends visible, while with the latter it is not possible to deal with more than about 2½ miles of single track a day, as compared with 25 to 75 miles of plain track when using an electric detector car.

It is the constant reversals of stress to which the rails at a joint are subject, by the pounding action of the wheels as they pass over, that is the main cause of the development of cracks; the pitting caused by corrosion is a contributory factor, especially in tunnels, and forms the starting point of many such cracks. As stress concentrations are at their highest at any sharp angles in the steel, a protection against crack development is to chamfer the rail-ends, especially in in the web and fishing angles, and also to chamfer the edges of the bolt-holes on both sides. The correspondence does not state whether or not this practice obtains in the U.S.A.; it adds a little to rail production costs, but is likely to prove economical in the end to the rail users.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Winter Train Services

September 28

SIR,—I think Sir Michael Peto in his letter on winter train services in your September 28 issue is a little unfair in his criticisms. He alleges that the Railway Executive shows no sign of recognising the possibilities of through traffic between the North and West of England. A glance at the timetable will show that round the clock there are five through trains from Plymouth to the North of England, a far better service than one would probably get on some of the overseas lines he mentions. In this connection it is almost impossible to compare the railway system of one country with another. Running diesel cars mornings and evenings between centres of population in, say, Algeria, may be a good proposition, but in this country the traffic is too heavy to use only railcars. Doubtless one of the reasons for withdrawing the diesel car service between Bristol and Cardiff was that it often left people behind.

Yours truly,

J. F. BURRELL

80, Longmead Avenue, Bristol 7

Liverpool Street Suburban Services

September 29

SIR,—It is exactly two years since the completion of the Liverpool Street-Shenfield electrification, and it is possible to consider its success unprejudiced by first impressions.

To say that the electric services have reached Great Eastern standards of punctuality and efficiency is probably the highest praise that one can give. Lord Claud Hamilton, the Holdens, and F. V. Russell, had they been alive today, might not have liked the methods used, but they would certainly have approved the results attained. The frequency of service and scheduled speeds are both highly satisfactory, and the trains have a considerable margin of speed in reserve. I have noted a 9 min. run to Ilford, schedule 12 min., and 13 min. 30 sec. on a Romford "flier," schedule 17 min., the last eight miles being reeled off in 7 min. 40 sec.

The severe gradients of Bethnal Green bank, Ilford flyover and Ingrave bank present no obstacle to the trains, which climb the latter in weak field notch at 57-62 m.p.h. Most important, the present peak service on the electric line is capable of a two-thirds increase before full capacity is reached, which leaves a good margin for the future. It is small wonder that receipts on the Shenfield line have practically doubled since electrification.

Of the many major engineering and operating achievements involved, three stand out as memorable: the bringing into use of the Ilford flyover one Saturday night in autumn, 1947; the re-tracking and resignalling of the Liverpool Street approach, completed only six hours before the official opening ceremony; and the manner in which the steam services were maintained between 1936-1949 despite speed restrictions galore, maintenance difficulties, and bomb damage.

For many years, politicians, local newspapers, ratepayers' associations, and even *Punch* vied to produce witticisms at the expense of Liverpool Street; a torrent of abuse and complaints poured out. Meanwhile the L.N.E.R., already getting several quarts of traffic into and out of the Liverpool Street pint-pot, refused to be stampeded into a half-baked electrification—half-baked because mere electrification without careful reorganisation of the whole east side of the station would have been a waste of money. The solution was worked out with London Transport, and the result has been such that all the erstwhile critics have become silent. There was criticism not only from the public, but also from railway and electrical engineers of the L.N.E.R. decision to use 1,500 V. d.c. overhead electrification, but experience has amply justified this decision. For example on January 1 this year, when conductor-rail systems were severely delayed by a sudden freeze-up, Liverpool Street recorded nearly 100 per cent, punctuality.

The long interval in railway matters between idea and execution is well illustrated in the Great Eastern suburban area. In *The Engineer* in 1900 a remarkably prophetic correspondent suggested extending the Central London Railway (then terminating at the Bank) to Liverpool Street to link up with a G.E.R. tube to Stratford, whence it would operate the Woodford branch and the Chigwell-Hainault loop (then under construction and opened in 1903). The reorganisation of the Shenfield line with complete segregation of suburban services was mooted in 1920 in view of the remarkable success of the west side improvements then carried out. The G.E.R. system was always regarded as the "finest suburban service in London," in fact *The Railway Gazette* devoted a whole issue to the description of the 1920 "jazz service." Since then, the Southern Electric and London Transport have taken *de facto* possession of the coveted title, but the electric "Great Eastern" now bids fair to regain it.

It would be idle for anyone but a politician to attempt to divide the credit for this remarkable electrification between the L.N.E.R. and the Eastern Region. May I therefore as a frequent traveller on the Shenfield line express appreciation to all officers and men of both who planned and carried out this work between 1936 and 1949? It remains a permanent record of their ingenuity in solving one of the worst traffic problems in the London area.

Yours faithfully,

R. F. YOUELL

57, Collinwood Gardens, Ilford

Transport Integration

September 1

SIR,—In the article on integration of transport in your August 31 issue, there are many peculiarities which tend to indicate that the writer knows little or nothing of the railway rates and charges and commercial structure, a common failing which is completely bedevilling (I take the expression from the article) the attempts of the Road Haulage Executive to frame a practical rates policy and which, *inter alia*, has torpedoed the B.T.C. charging proposals and thrown us back to "square deal" days.

One phrase illustrates the failure to apprehend the basic issues in the conflict between rail and road transport charging:—

> "The application of the principle" (rates based on the principle of minimum use of national resources) "depends on the development of accurate costing of railway transport *to the degree already attained in road transport.*" (Italics mine.)

Whatever degree of accurate costing in road transport has been attained among independent hauliers or private carriers, it is certain that accurate costing within the Road Haulage Executive organisation has nothing to do with its rate-making. If accurate costing means that the real cost of every individual transaction can be known in advance of movement, it is completely unattainable, unless the incidence of traffic is determined almost to the pound avoirdupois before each vehicle starts on its round trip, or unless there is absolute discrimination in the acceptance or refusal of traffic. Costs per vehicle can be determined accurately for a given journey—so can costs per capacity ton-mile—but costs per actual ton-mile or costs per ton can be known only if the total tons to be carried, the distances, and the time factor (governed by the running time and the time taken by each delivery) are known accurately in advance.

Railway rates and charges have been related not to the costs of carrying individual items, but to the cost of providing services under statutory obligations. Such costs,

and the statistics which explain them, are perhaps more accurately known on British Railways than elsewhere in the transport industry; the railway rates structure, in the days before there was competitive abstraction of traffic or denial of fresh traffic without diminution of statutory obligations, was a remarkable achievement in the field of calculation and judgment.

On the passenger side, there will always be statutory obligations to provide regular services, both by railway and by road in some fields, and either by railway or road in others. There will no doubt be growing competition by private car, motorcycle, and cycle. Costs by public transport will always be the total cost of providing the services; the fares (which have to be fixed in advance of movement) will always vary with the incidence of traffic, but increases will always lag behind increased costs, and reductions behind reduced costs.

The problem in the first place is to estimate the total cost of providing a physically integrated service (not a service competitive within the B.T.C.) by the efficient use of each form of transport within its own sphere. Such cost could be obtained by a complete analysis of the traffic carried by the B.T.C.; then by a complete remodelling and costing of movement in accordance with the following principles:—

(i) Railways: movement of full train loads between concentration centres, calculated at the rate of 500 tons at 30 m.p.h. or such variations of tonnage and speed as will yield an overall average of 15,000 net ton-miles an engine-hour.

(ii) Road transport: feeding and tapping the concentration centres.

(iii) Road transport: direct services locally or long-distance for special movements or for traffic not suitable to the principal rail-cum-road service structure.

(iv) Rates and charges for the principal structure to follow the general lines of the railway rates structure, but at a much lower level as the costs of operation (and this is a personal view still to be confirmed) would be so much lower as to stand up to any kind of competition.

To start with rates and charges, as the B.T.C. have done, has been to consume the years like the locusts: the main achievement has been to demonstrate the impossibility of getting anywhere by this means.

The artificial divisions of traffic into sundries and other, which your correspondent makes, would be unnecessary in the more rational approach I make to the functional problem. What he calls sundries become full-loads when taken to a station or road transport depot and amalgamated with other "sundries" into full train loads or full vehicle loads between concentration centres, even if converted into "sundries" again at the other end.

The railways "smalls" scale went far enough in the matter of charging higher rates for the extra work involved in handling small consignments, and I regret the attempts now being made to "Carter-Paterson-ise" the rates for consignments less than one ton in weight, as well as to carry the cubic content argument to extremes without at the same time providing vehicles of suitable cubic capacity to meet modern requirements.

If the principles of operation which I advocate are adopted, there will be little need to distinguish between express and ordinary services. Integrated services would cover the larger part of the general merchandise traffic of the country. Higher charges for rapid movement are not in line with true costing. It is the slow movement of trains and traffic which is the direct cause of high operating costs. Time in terms of engine hours, not distance in terms of miles, is cost.

A feature of road transport competition little noted in the past, except by the parcel carriers, was that road transport competed effectively not only for traffic normally carried by goods train but also for parcels traffic by passenger train and by parcels carrier. There is now a regrettable tendency to force traffic into the parcels scale by road, and thereby to obtain uncovenanted increases in rates—that is, increases higher than general increases imposed to meet specific higher costs.

I would deliberately legislate for giving to the inland waterways all the traffic they can carry, even with greatly improved equipment. They do a grand job today, almost unhonoured and unsung. It ought to be better known and appreciated.

Yours faithfully,

FREDERICK SMITH

65, Hallowell Road, Northwood

Report on Electrification of Railways

September 26

SIR,—In your issue of April 20, 1951, you published extracts from the report on electrification of railways by the committee appointed by the Railway and London Transport Executives. I have read this, and was surprised to see that the committee considers a.c. overhead track equipment just as costly as that provided for d.c.

Railways that have installed high-voltage single-phase electrification schemes have found that approximately one-quarter of the copper only is necessary, and this further reduces the cost by allowing the use of very light supporting structures. Recently, the French National Railways published figures showing that their a.c. overhead cost only half the amount per mile expended on their d.c. overhead. It is difficult, therefore, to see how the committee arrived at this surprising result, and it is felt that this statement would be hard to substantiate.

There is also a paragraph on page 39 of the report that is not in accordance with the known facts. This states: "It is worth noting that in the last 20 years the only electrification on the single-phase a.c. system, with the exception of those on the Reading Company, the Pennsylvania Railroad, and the Costa Rica Pacific Railroad, has been in countries in which this system was already established."

In 1932, Hungary, with only d.c. electrification, installed a section of single-phase a.c. electrification. France only recently has done the same thing at home, and is contemplating this also in her colonies.

The Belgian Congo is contemplating an installation of a.c. electrification. Here in New Zealand, where we have four well-established 1,500-V. d.c. systems dating back to 1924 and a fifth d.c. scheme under construction at the moment, a decision has been made that all future extensions will be on single-phase a.c. Does not the statement in the report thus tend to misrepresent the present world trend?

One naturally asks why it should be necessary to belittle the generally accepted advantages of single-phase a.c. electrification so as to justify a decision to use d.c. in Great Britain. If that decision is sound (and I do not question it), it should stand on its own feet. The extent to which the committee has gone to show up the a.c. system in a poor light and the rather unexpected and puzzling results obtained in the comparative estimates on alternative electrical systems, would suggest that those feet are a little shaky.

Yours faithfully,

C. A. MACKERSEY
Electrical Engineer

New Zealand Government Railways, Wellington

PANELLING ON LONDON TRANSPORT ESCALATORS.—Developments in plastic materials with glass-hard surfaces in a wide range of patterns and colours have suggested the possibility of their use in escalator panelling. Pending developments of the technique for satisfactorily applying them to metal panelling London Transport is making a trial installation on two escalators at Moorgate Station. This is the latest step in a line of development that began 40 years ago when the first London Transport escalator was installed at Earls Court. The two machines at Moorgate now being fitted with plastic-surface panels are those which were originally panelled with veneers to display Empire timbers available for such a purpose and also as a testing ground with a view to their future use. The new surface is a material known as Melamine and is being supplied by Wareite Limited.

THE SCRAP HEAP

Dog Seasons

A need for season tickets for dogs was felt in Western Germany by passengers such as watchmen and blind persons who must travel frequently with a dog. The Federal Railways accordingly have introduced, experimentally, monthly and shorter-period season tickets for dogs. "The signature of the dog as holder of the ticket," according to a local report, "is that of the person accompanied by the dog."

Stone Carvings at Berry Brow Station

At the back of the up platform at Berry Brow Station (on the Huddersfield to Penistone line) are some carvings in stone, depicting two locomotives and three human heads. They are the work of two local sculptors, father and son, named Stocks. The locomotives are typical of two generations in design in the Victorian period. The older one appears to have been executed in native stone, and is now sadly weather-worn. It was carved by Thomas Stocks between 1860 and 1865, and shows a train of that period hauled by an engine with a haystack firebox, emerging from a tunnel. When it was completed, the sculptor offered it to the stationmaster, who had it placed on the platform in the position now occupied by the later carving.

After the death of Thomas Stocks, his son, John Charles Stocks, executed the second carving in more weather-resisting stone. It was accepted by the Lancashire & Yorkshire Railway, and substituted for the older carving, which was moved to a less prominent position. The second carving was completed in 1886, and depicts in great detail a train emerging from a tunnel. The engine is a 0-4-4 tank of strong Manchester, Sheffield & Lincolnshire Railway rather than Lancashire & Yorkshire characteristics. In this connection, it is of interest to recall that the M.S.L.R. and its successor, the Great Central, had running powers over the line.—*From an article by William B. Stocks in "The Railway Magazine."*

Defeat

The man in the compartment leaned forward and touched the young man on the arm. "Excuse me," he said, "but would you mind taking your feet from the seat?" The young man gave him a haughty glance. "May I ask," he queried, "what my action has to do with you?" "You may," said the other, "I'm a British Railways travelling inspector." With a muttered apology the young man hastily transferred his feet to the floor.

His girl friend, however, was made of sterner stuff. She spread a newspaper on the opposite seat. "There," said the feminine Raleigh, "put your feet on that, dear." She then shot a challenging look at the inspector. His comment was brief. "I pass," he said.—*From "Miscellany" in "The Manchester Guardian."*

Second Class in Ulster

As regards the provision of second class accommodation (see the Scrap Heap of September 28) the Ulster Transport Authority states that its long-term policy is to abolish second class in trains. In the diesel train working on the former B.C.D.R. Belfast-Bangor line, which is first and third only, only the first class accommodation is marked on the outside, the third class bearing no outside indication, as on British Railways As to the use of the diesel train by holders of second class season tickets, it is stated that the cost of a second class yearly season compares favourably with that of twelve third class monthly season tickets, and that the diesel train does not run on the Bangor line during peak traffic periods, when second class is provided in the steam trains.

Historic Railways

What does one do with a derelict railway line? One possibility would be for the National Trust to take over disused branch lines and run them on historical principles. The country is full of railway lovers who . . . are prepared to support the idea of railways more than railways themselves. They might band together and buy up railways for antiquarian purposes. —*From "A Scotsman's Log" in "The Scotsman."*

Love on the Roll

As a train left Milan a guard noticed two 25-year-olds cuddling. He warned them that petting on trains was not allowed. A few miles later he passed by and expostulated with them again, but after a third warning he made them get off the train. Then he took their tickets and tore them up.

The railways say that "excessive kissing" on trains is unseemly and that the guard was right in stopping such behaviour.—*From the "News Chronicle."*

Time to Stare

("*What is this life, if full of care, we have no time to stand and stare?*"—*W. H. Davies*)

If progress all depends on speed
And headlong haste is God indeed,
I fear I am no devotee—
A mile a minute does for me.

Jet planes may soar with scarce a sound,
But—love still makes the world go round
And these old eyes have often seen
Romance bring up the 9.15.

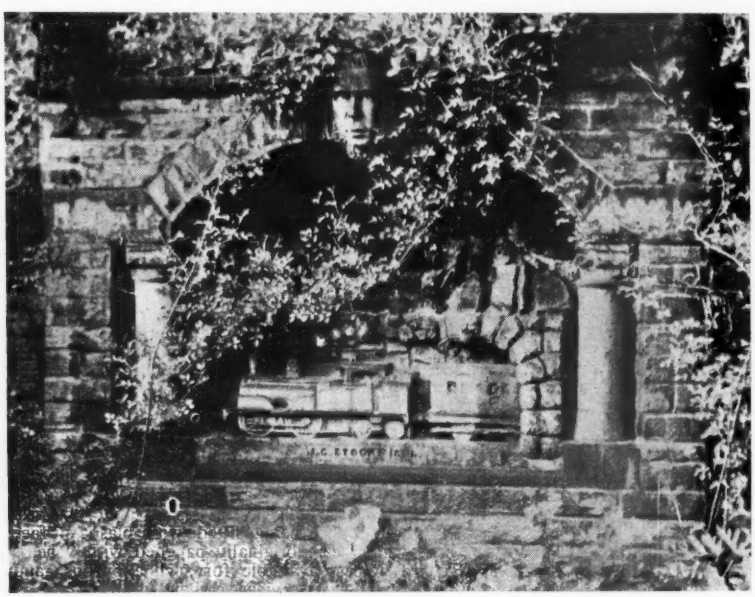
Although the times are out of joint,
No scornful finger will I point;
Let others fret and fume and cuss
As they are moved, I make no fuss.

I just prefer my friendly train
To any helter-skelter plane,
And those who boast its day is done
Are self-deceivers, every one.

Aye, you may safely take my word,
I am no dashing dicky-bird;
My inner man is much too proud
To hop about from cloud to cloud.

Life, in these days of strife and stress,
Is sadly short of graciousness;
Let's leave to our four-footed friends,
Their right to chase their latter ends!

A. B.



Stone carving by John Charles Stocks at Berry Brow Station
Photo] [W. B. Stocks

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

INDIA

New G.I.P.R. Electric Stock

New electric multiple-unit rolling stock with electrical equipment supplied by the English Electric Co. Ltd. and the British Thomson Houston Co. Ltd. for the Great Indian Peninsula Railway was introduced officially on September 3 at a ceremony presided over by Doctor Jivraj Mehta, Minister, Public Works, Bombay.

This stock, described in our April 27 and May 11 issues, is operated in four-car units, each made up of two 1,500-V. motor coaches of 700 h.p., and two non-driving trailers. The motor coaches are built by the Metropolitan-Cammell Carriage & Wagon Co. Ltd., whose associates in the East are Vickers (Eastern) Limited; the trailer coaches are built by the Birmingham Carriage & Wagon Co. Ltd.

A feature of the operation of these trains is running through flooded tracks during the monsoon season, necessitating special features in the design of the equipment; the trains can run through flood water 8 in. above the rails at speeds up to 5 m.p.h., and the traction equipment being waterproofed to a height of 30 in. above rail level.

The 28 units supplied on this order are to augment services already operated with stock supplied by the English Electric Company in 1928, comprising 53 motor coach equipments, 104 trailer coach equipments, and 52 driving trailer coach equipments.

For the inauguration ceremony a special train consisting of four motor coaches and four trailers was drawn up alongside no. 4 platform at Victoria terminus, Bombay. The proceedings were opened by Mr. H. P. Hira, General Manager, G.I.P.R., who during his speech paid tribute to the English Electric Co. Ltd. with special reference to the service which the railway had had from the multiple-unit stock previously supplied.

VICTORIA

Locomotive Withdrawals

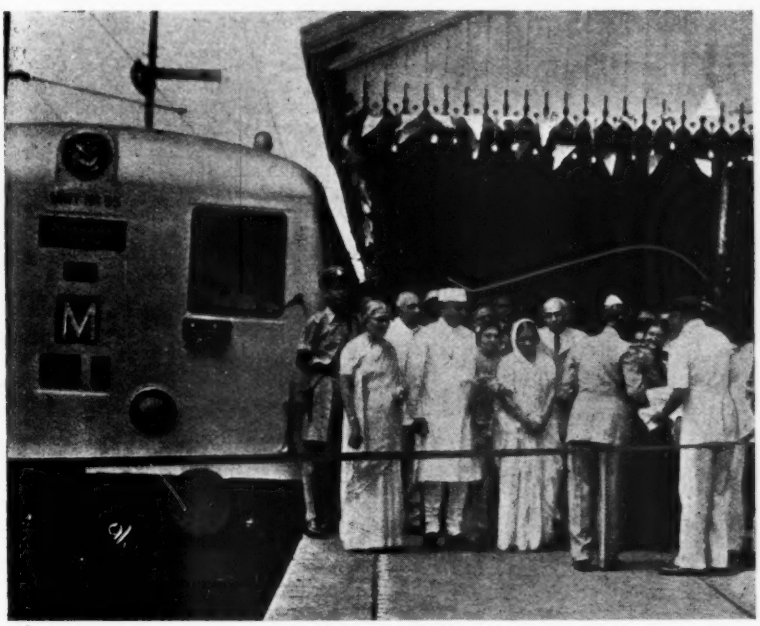
Now that all the Class "N" 2-8-2 locomotives built by the North British Locomotive Co. Ltd., Glasgow, have been delivered and have gone into service with some of the Class "R" 4-6-4 engines built by the same firm, the railways have been able to accelerate the scrapping of locomotives which have passed their economic life. About 30 passenger, goods and shunting engines have been condemned, and eleven have already been scrapped. The condemned locomotives include "A2s" 4-6-0s, some of which have done more than 1,000,000 miles. One Class "T" locomotive, built for the Victorian Railways by the Phœnix Foundry Company, Ballarat, in 1884, has been retained as an historic exhibit. The shunting work of the "T," "Y," and "E" locomotives will in future be performed by diesel-electric locomotives built by the English Electric Co. Ltd., the first ten of which went into service in Melbourne Yard at the end of August.

Alternative Locomotive Fuels

The railways are also implementing plans to convert more locomotives to burn oil and pulverised brown coal. The success of 2-8-2 type X32, the first V.R. engine to be fitted with brown coal firing equipment, has encouraged the decision to equip more engines to burn it. It was intended at first to convert another Class "X" locomotive, but it has now been decided to fit a Class "N" 2-8-2 locomotive with the second set of brown coal firing equipment imported from Germany; this engine should be in service next year. A further Class "28X" locomotives will also become brown coal burners. By 1954 it is expected that the supply of brown coal dust from the great open cut at Yallourn will be at the rate of 60,000 tons a year, or enough for 34 engines.

To make the railways as independent as possible of supplies of New South Wales and imported coal, it has also been decided to convert more locomotives to oil burners. Eighty-two oil burning engines have been in service for some years. In addition, the four Class "S" Pacific locomotives, which haul the "Spirit of Progress" between Melbourne and the New South Wales border, have also been included in the oil conversion programme; two are now converted and a third will be ready soon. The 60 Class "J" 2-8-0 locomotives to be built by the Vulcan Foundry Limited are also to burn oil.

New Bombay Suburban Stock



Special train of new electric suburban stock at Kurla G.I.P.R. Mrs. Jivraj Mehta, wife of the Minister, Public Works, Bombay, is preparing to cut the tape and inaugurate a new spur line to Mankhurd

Photo] [English Electric Co. Ltd.

CANADA

Royal Train

The royal train which is conveying Princess Elizabeth and the Duke of Edinburgh across Canada was used for their journey to Quebec City. It consists of ten coaches, eight of which are living and eating quarters, and the other two for luggage.

Unlike the royal train of 1939, the coaches are not a uniform colour but bear the normal Canadian National green and Canadian Pacific red. Stock has been drawn from the two railways and coaches owned by the Government. Different locomotives will be used on the journey across Canada. Under the system of each railway providing motive power when the train is on its lines, 14 C.N.R. locomotives and nine C.P.R. locomotives have been rostered for working.

The Prince and Princess and immediate staff will occupy the two coaches normally used by the Governor-General. Other members of the Royal household, the inter-departmental committee and a platoon of Royal Canadian Mounted Police will occupy the rest of the train. Princess Elizabeth's suite in the rear coach consists of a bedroom, dressing room, and bathroom. Bed and

dressing rooms are in shell pink and have brown carpets. Blending are dust-pink damask coverings and drapes of dust pink taffeta. The bathroom has mauve tile and white fixtures. Prince Philip's bedroom is cream. Drapes and coverings are green and brown printed linen and carpet is light brown. There are mauve tile and white fixtures in the bathroom. The sitting room in the rear coach is panelled in curly birch of a golden brown tone; it has an ivory ceiling and overall carpet of light brown. Furniture is covered with green damask.

In the second coach sitting rooms and dining rooms have surf green walls and ceilings. The coach includes a dining room for the Royal party which seats 12 persons. Radios have been installed in lounges of both coaches and there are speakers in both rooms. There are also facilities for outside telephone service when the train is parked.

Their Royal Highnesses will be able to follow the route of the tour on a large map hanging in the Princess's sitting room. It is hand-coloured and embellished with the coat-of-arms of Their Royal Highnesses, Canada, and the ten Provinces.

FRANCE

New Signalbox at Bry-sur-Marne

On May 22, concurrently with colour-light automatic signalling between Neuilly and Chenevières, a new signalbox, with all levers free and without locking, was put into service at Bry-sur-Marne, at the spur line connection between the Grande Ceinture and the Paris-Belfort lines. This box consists of a small desk panel with route controlling push-buttons, with automatic return to the control position, above which is a small illuminated diagram, forming a small-sized assembly mounted on an existing support at Bry Station and operated by one of the staff there.

The new box, while effecting a high concentration of working, greatly facilitates the traffic working and provides all the advantages obtainable by it from non-interlocked levers—ease of working, cancellation and pre-setting of routes, and non-stick working of the through routes.

Each of the six buttons controls a route; four having automatic cancellation and two control two with non-stick control, as follows: pushed in—operation; pushed out—manual cancellation.

This equipment was designed by the S.N.C.F. department concerned with fixed equipment, in agreement with the Traffic Department and in conjunction with the Aster Company which also provided the automatic signalling adjoining. For the most part the equipment has been provided from existing apparatus, at work or in store.

Winter Passenger Services

The winter passenger services in force from October 7 comprise augmented railcar services, facilitated by delivery of new and repair of war-damaged cars, and additional workings of new lightweight stock, notably over steam-worked branches in the Northern and Mediterranean Regions. Additional second class couchettes also are provided.

There are some accelerations in the Paris-Riviera services, mostly in the up direction, and a new afternoon service from Cherbourg to Paris; a pair of fast railcars between Paris and Le Havre has been replaced by steam trains covering the 142 miles in 144 min. down and 142 min. up, with a stop at Rouen. In the South Western Region, the Paris-Mont Dore services are much accelerated; on the Toulouse-Bayonne electrified section a shuttle service of fast light trains serves Tarbes, Lourdes, Pau, Bayonne, and the Basque coast. More than 40 min. will be saved in the winter sports period by through coach workings between Paris and Bourg St. Maurice.

EASTERN GERMANY

Coal Shortage

Drastic traffic restrictions are being introduced because of the increasing shortage of coal. According to an announcement by the Ministry of Communications, all rail and road traffic deemed to be "unimportant from the economic point of view," is to be suspended. In the first instance, all passenger trains not normally filled to capacity will be affected.

SWEDEN

Increasing Narvik Line Capacity

According to a report from Sweden, the annual capacity of the Kiruna-Narvik line is to be raised some 40 per cent. to 11,000,000 *tonnes*. As regards the Norwegian section of the line, from Vassijaure to Narvik, 28 miles, the Norwegian State Railways have confirmed that a commission has been appointed to conclude an agreement with the Swedish authorities.

IRELAND

Dundalk, Newry & Greenore Railway

The decision to close the Dundalk, Newry & Greenore Railway, which was to have taken effect on October 1, has been postponed until January next. Strong representations against the decision to close the line which links Dundalk at one extremity and Newry at another, with the port of Greenore, have been made by public representatives in the area. A deputation is to be sent to the Minister for Industry & Commerce in Dublin to discuss the matter.

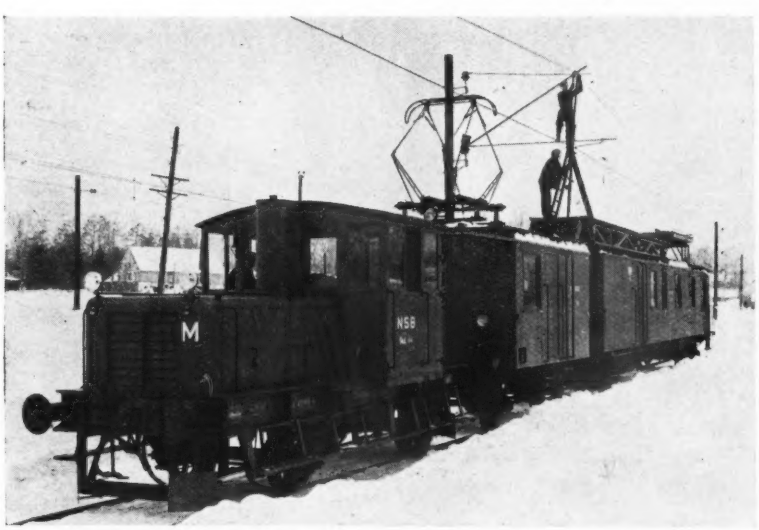
Although almost all the motive power is supplied by the Great Northern Railway (Ireland), the system is the property of the B.T.C. It has 27 miles of 5-ft. 3-in. gauge line; running powers are exercised over the G.N.R.(I.) into Dundalk and Newry. At one time Greenore had a considerable passenger and cargo-cross-channel traffic but, at present, there is only one cargo sailing each week. It is considered to be one of the best deep-sea ports on the east coast.

Proposed Closing of Donegal Branch

An application has been made by the County Donegal Railways Joint Committee to the Minister for Industry & Commerce for permission to close the 24½-mile branch from Stranorlar to Glenties in County Donegal.

No trains have been operated on this line during the last two years as it was found possible to carry goods by road more economically. In 1947 buses replaced the passenger train services when the line was closed for passenger traffic.

Electrification in Norway



Adjusting and checking newly erected overhead with dummy pantograph, Norwegian State Railways

Mechanical Control of Camshaft Notching

Operation of controller drum by handwheel and return action from the camshaft

IN a servo-operated camshaft control system provision must be made for stopping the servo-motor when it has rotated the camshaft to a position corresponding with the notch selected by the driver's controller. When this function is performed electrically, the total wiring involved in the control system may be extensive, and simplification in this respect was one of the motives underlying the development of the mechanical system provided by the Compagnie Electro-Mécanique for the latest 2-Do-2 locomotives of the French National Railways.

Two other requirements which were met at the same time were alternative speeds of the camshaft and repetition of its settings on the controller faceplate to show the driver that the equipment has responded correctly. In earlier S.N.C.F. 2-Do-2 locomotives an indicator was provided, but the method of driving it necessitated its being installed behind the driver's back.

Transmission to Camshaft

The method of transmitting movements of the driver's main controller handwheel to the camshaft is shown in Fig. 1. When the handwheel is operated it turns gearwheel 1, which drives pinions 2 and 3 and causes rotation of gearwheel 4 with its shaft. Gearcase 5 does not move, being held stationary by its worm return drive from the camshaft.

Gearwheel 4, in rotating, turns the toothed disc 6 and therefore moves the controller drum 7 through a certain arc. If the handwheel has been moved only one notch, the segments on drum 6 complete a circuit to energise the magnet valve for normal-speed operation of the camshaft.

Movement of the controller handwheel through two notches increases the amount by which drum 7 rotates by bringing a second tooth on the driving disc into action. If the handwheel is moved more than two notches, the teeth disengage with the driven element on the shaft of the controller drum after it has rotated through its prescribed arc.

The effect on the electrical circuits is therefore just the same in both cases, namely, to rotate the drum until its segments cause the magnet valve for accelerated operation of the camshaft to be energised as well as the normal valve.

The fast and slow action valves communicate with exhaust orifices by means of which compressed air is released from one side or other of the piston which operates the camshaft. As the fast action orifice is the larger, opening this at the same time as the normal valve speeds up the camshaft movement considerably.

When the camshaft revolves under the action of the air engine, it rotates the gearcase 5 on the controller through the return drive shown in the diagram. Pinions 2 and 3 cause gearwheel 4 and its shaft to revolve, but in the opposite direction to before. When disc 6 approaches its former position, its teeth engage again with the driving element of the controller drum, moving it back into the position in which the circuits to the magnet valves are broken so that the air engine is stopped.

While the gearcase revolves it drives a pointer mounted in the same place as that attached to the driver's handwheel. When the action is completed the two pointers coincide, thus informing the driver that the camshaft has moved to the position selected. The principles of operation are the same for notching up or notching back, the appropriate magnet valve being energised according to the direction in which the handwheel is turned.

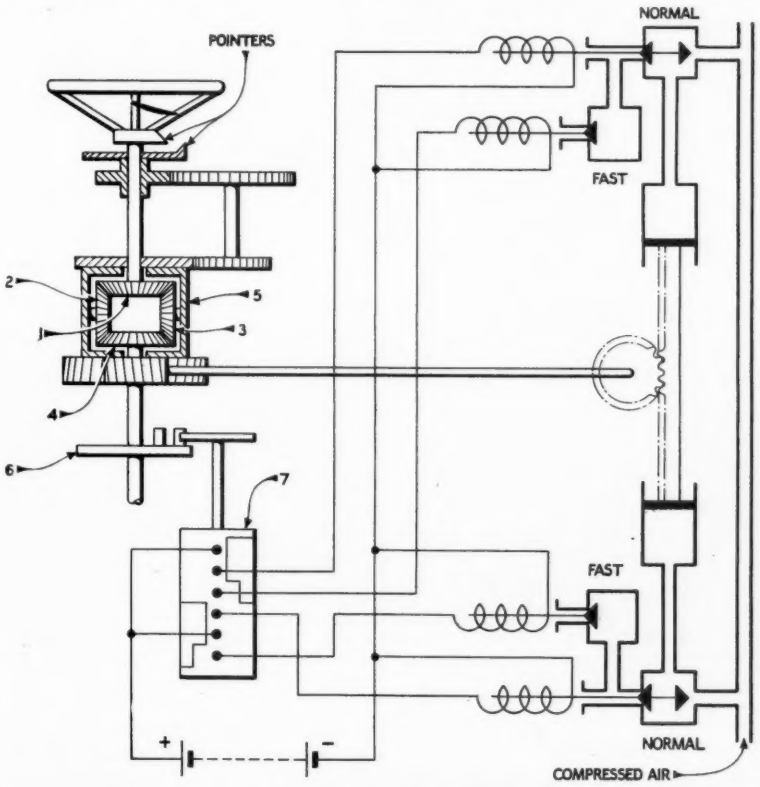


Fig. 1—Actuation of control equipment through differential gearing

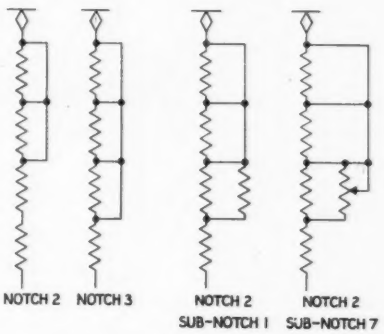


Fig. 2a and Fig. 2b — Schematic arrangement for resistances, showing vernier control by parallel resistance

Electric Servo-Motor Operating

A similar system is used for operating the electric servo-motor which drives the auxiliary camshaft for fine control of notching when starting a train in certain conditions. With this arrangement, brought into use by a separate handwheel on the controller, finely graduated resistance stepping is effected by connecting a high resistance across successive sections of the main rheostat.

Fig. 2*a* shows schematically the normal conditions on notches 2 and 3 when the fine control is not in use. In Fig. 2*b* the auxiliary resistance is seen connected in parallel with the same section of the main rheostat to provide a subsidiary notch. The auxiliary

resistance is then short-circuited in six steps before the main notch 3 is reached. Further subdivision between notches 3 and 4 can be effected by connecting the same auxiliary across the next section of the main rheostat, and this process can be repeated on other notches. The variation in tractive effort from notch to notch when using the fine control is only about 1,300 lb., or 3·4 per cent. of the maximum tractive effort at starting, although the normal S.N.C.F. requirement in this respect does not go below 15 per cent.

The novel control arrangements described are not achieved without some mechanical complication. Repetition of the camshaft movement, for example, involved the problem of making 12 degrees rotation of the camshaft move the repeating pointer through 14 degrees. These angles are too small for accurate transmission by a direct drive, and trains of gearing are used to multiply the actual camshaft movement 18 times, followed by the appropriate amount of reduction. Each transmission system consists of shafts coupled by gearwheels or chain and sprocket drives, and incorporates universal joints.

A Machine Vice for Milling and General Purposes

Developed by the London Midland Region to cover a wide field of application with a minimum of operating effort

THE vice described in this article was developed at the Horwich Locomotive Works of the London Midland Region of British Railways for use on milling machines, and covers a much wider range of application than the more usual type of vice. The accompanying drawing shows the general construction of the vice. The body *a* is of forged mild steel and has a groove *m* on each side for ease of clamping to the machine table. A fixed jaw *b*, which may be serrated or smooth faced, is provided for work requiring repetitive settings, the jaw being secured to the body by four socket screws *n*. The loose jaw *c* is a special feature of the vice and is actuated by means of a socket head screw *d*.

The racks *e* and *f* attached to the body *a* and the jaw carriers *g* enable rapid adjustment to be made for varying work widths. The racks are secured to the body and jaw carriers by means of cheese-head setscrews *j* and *k*. The jaw *c* pivots on a high-tensile steel pin *l* secured to jaw carriers *g*.

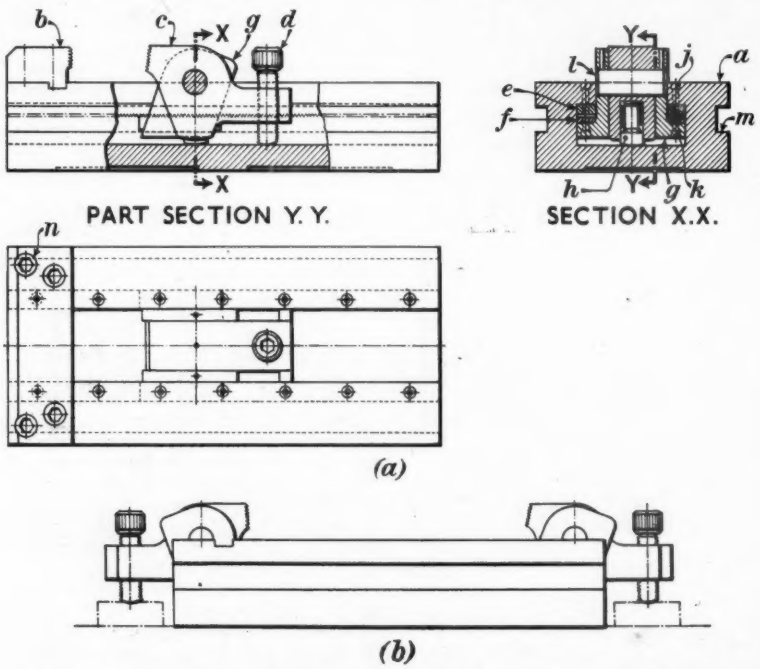
Gripping Power

The gripping power and non-slipping qualities of the vice are attributable to the racks and the cam-like action of the serrated face of the loose jaw *c*. The cam action of the jaw is responsible for the downward pressure exerted on the work, which is a very desirable feature in vice work, although one not always achieved.

The teeth of the serrated strips *f* and *e* are kept in mesh by means of a spring-loaded mild-steel plunger *h*. The movable jaw can readily be moved into a new position by applying downward pressure by hand until moved into the new position, and it will resume its normal position when released by the upward pressure of the spring-loaded plunger shown at *h*.

The drawing below the sketch already described is an alternative arrangement using two loose jaws in place of one fixed and one loose. This provides a range of gripping width from 0 up to approximately 12 in. with a single vice, the maximum width being obtained with each loose jaw at the extreme end of the body, and the socket screws tightened on loose packing outside the vice ends. Any greater width can be effectively gripped by setting up two vices, with one loose jaw opposite the other. In such cases the bodies act as work parallels and two or more vices may be applied along the length of the work piece.

The type of vice illustrated has been in use over a long period and has included the heaviest slab milling and negative rake milling at high feed rates. In all applications they have been found highly efficient and enjoy full confidence of machine operators. Minimum effort is required to operate, and loose packing bolts, and so on, are obviated. Further, the vices are not limited for use on milling machines, but can be used on all general machining operations.



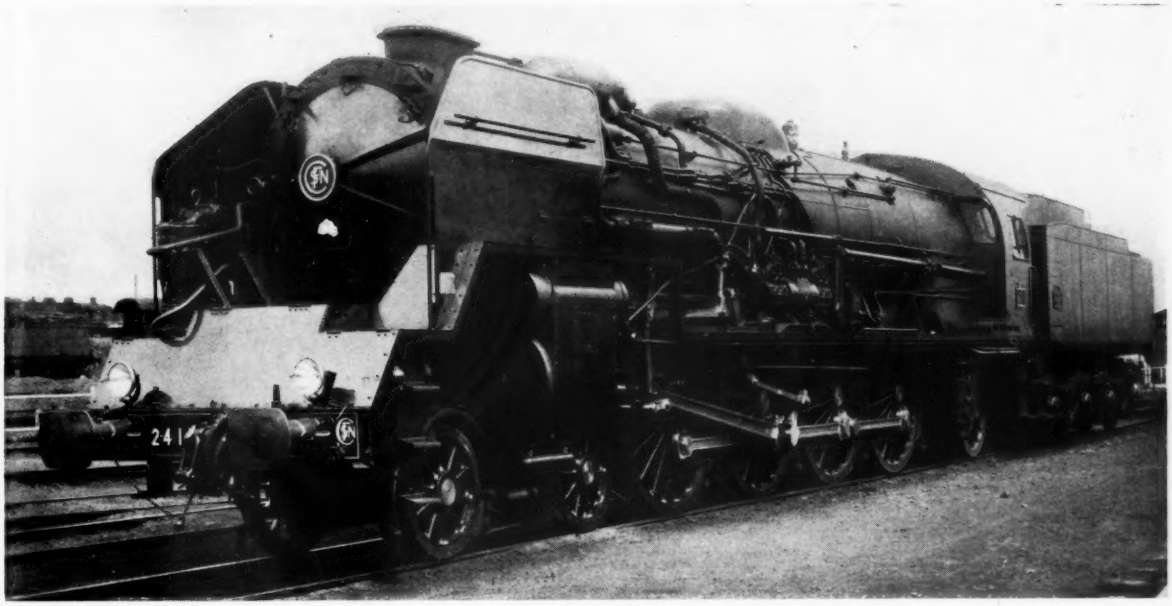
(a) Section and elevation of milling machine vice (b) An alternative arrangement with two loose jaws at maximum opening

BLANKETING ON WESTERN REGION MAIN LINE.—Extensive blanketing operations covering some ten miles of the West of England main line between Patney and Westbury will necessitate possession of this section by the Chief Engineer and diversion, re-timing, and cancellation of certain trains between October 14 and November 11, inclusive. Diversions include: (*via* Melksham) the 10.30 a.m. "Cornish Riviera," 1.30 p.m. and 3.30 p.m. from Paddington, the 8 a.m., 9.45 a.m. "Cornish Riviera," 11 a.m., and 1.20 p.m. from Penzance, and the 8.30 a.m. from Plymouth; (*via* Devizes) the 11 a.m., 12 noon "Torbay Express," and 5.30 p.m. from Paddington, the 7.15 a.m. from Plymouth, and the 11.25 a.m. "Torbay Express" from Kingswear. On Sundays, West of England trains to and from Paddington will be similarly diverted. The resultant extension of running time of West of England expresses will be 10-35 min. The 8.10 a.m. Reading to Bristol will be cancelled and the 2.35 p.m. Paddington to Bristol and 11.22 a.m. Bristol to Reading will run on Saturdays only during this period.

Recent French Steam Locomotive Practice—1

Developments in post-war construction of heavy mixed traffic, passenger, and freight types

THE advances in French locomotive practice between 1930 and 1939, in particular the results of Monsieur Chapelon's research, have already been fully described in this country. Since the war equally notable developments have taken place, although somewhat overshadowed by the extension of electrification, economically justified by the shortage of indigenous coking coal and by abundant hydro-electric power, which supplies about 80 per cent. of the electric traction requirements of the French National Railways. Even when the Paris-Lyons electrification is complete, however, about 60 per cent. of the total traffic will still be steam-hauled.



Class "241-P" four-cylinder compound locomotive

To meet the acute shortage of motive power after the war, 1,323 mixed-traffic 2-8-2 locomotives were built to French designs in North America between 1945 and 1947. They are two-cylinder simples of Class "141-R" with 5 ft. 5 in. coupled wheels, 220 lb. per sq. in. b.p. and a tractive effort, at 85 per cent. b.p., of 45,500 lb. The locomotive weight is 117 tons, 83 for adhesion.

These locomotives operate 33 per cent. of the steam-hauled mileage and 49 per cent. of the total steam-hauled tonnage. A total of 604 is equipped for oil-burning and can cover up to 550 miles on heavy passsenger trains without refuelling. The average daily mileage for the oil-burning engines of this type is 142 and the coal-burning engines 108 miles, all repairs included. These mileages are largely run on moderate and slow-speed traffic, but the locomotives operating on faster services are rostered to cover average mileages of over 300 daily as, for example, those operating from Le Mans and Marseilles-Blancarde. On 25 fast and slow goods rosters operated by engines of this type from Lyons-Badan shed the average daily mileage is 243.

Fifty of the class have been fitted with modified front-end arrangements as a result of the modernisation of one of the Etat two-cylinder mixed-traffic 2-8-2s built in 1921, by which the fuel and water consumptions were reduced by about 25 per cent. compared with the standard engines of this type on equivalent duties.

Another 2-8-2 mixed-traffic type built in large numbers is Class "141-P," a four-cylinder compound with 5 ft. 5 in. coupled wheels, 285 lb. pressure and a total engine weight of 110 tons, 75 adhesive. They are developed from the similar P.L.M. 2-8-2 compounds, of which nearly 800 were built, but have improved front-end arrangements, increased working pressure, and strengthened frames. Since 1941, 318 have been built; they are giving satisfactory service on similar duties to those performed by the American and Canadian 2-8-2 type locomotives. They may run at up to 68 m.p.h. and can develop over 2,000 d.b.h.p. at speeds between 25 and 68 m.p.h.

Thirty-five four-cylinder compound 4-8-2 locomotives with 6 ft. 7 in. coupled wheels, 285 lb. b.p. and an engine weight of 129 tons (80 tons adhesive) were put into traffic in 1949-51. This class, "241-P," is a development of the "241-C" type built in 1931, and embody modifications based on experience with this successful locomotive. They haul heavy express trains on the South-Eastern Region main line between Dijon and Marseilles up to 800 tons. On the "Train Bleu" and "Paris-Cote d'Azur Rapide" start-to-stop scheduled speeds of 55-60 m.p.h. are required south of Lyons with loads frequently exceeding 700 tons. On the last-mentioned, locomotive 241-P12 recently covered the 219 miles between Lyons and Marseilles with two stops in 215 min. running time with 660 tons, recovering 26 min. of a late start. Such runs are frequently made by these locomotives when recovering lost time.

Compound and Simple 4-6-4s

For working the heaviest and fastest trains on the former Nord main lines a 4-6-4 design was prepared in 1936 by Monsieur de Caso. The original intention was to build four compound and four simple locomotives of otherwise similar design, but it was later proposed to build the fourth simple locomotive with individual axle turbine drive. The four compound locomotives and three simples (Classes "232-S" and "232-R" respectively) were completed in 1940. Construction of the turbine drive locomotive was abandoned during the war, and it was completed in 1949 as a four-cylinder compound, generally similar to Class "232-S" but with

Experimental 2-12-0 *for heavy freight haulage*

Walschaerts-operated piston valves in place of the poppet valves fitted to the previous locomotives. This locomotive, classified 232-U.1., has sustained 80 m.p.h. on a rising gradient of 1 in 200 hauling 567 trailing tons; it is also capable of developing 3,500 equivalent d.b.h.p. continuously at 78 m.p.h. All the 4-6-4 type locomotives have 6 ft. 7 in. coupled wheels and a boiler pressure of 285 lb. The locomotive weights vary slightly, the most recent compound weighing 131 tons (68 tons adhesive).

The 4-6-4s haul the heaviest and fastest trains between Paris and Lille, Brussels and Jeumont (Franco-Belgian frontier). The four-cylinder compounds show an average fuel economy of about 10 per cent. compared with the three-cylinder simples on the same rosters.

The rebuilding, in 1946, of the Etat three-cylinder simple 4-8-2 built in 1932, as a three-cylinder compound 4-8-4 produced the most powerful express passenger locomotive in France. Locomotive 242-A.1., as the rebuild is designated, has 6 ft. 5 in. coupled wheels, 285 lb. working pressure and a weight of 146 tons (83 tons adhesive). In the rebuilding the underframe was greatly strengthened to enable the higher power outputs expected to be attained without fatigue in the frame members. In designing the drive for this locomotive, Monsieur Chapelon has adopted the Smith three-cylinder compound system, as used on the North Eastern Railway 4-4-0 No. 1619 in 1898, the five original Johnson 4-4-0 compounds of the Midland Railway in 1902 and the four Robinson 4-4-2s of the G.C.R. in 1905.

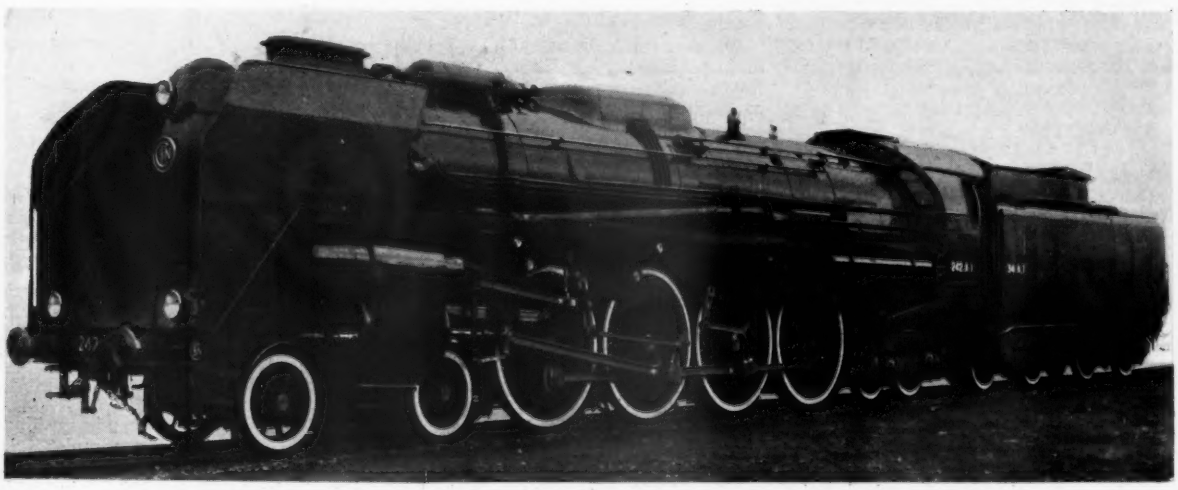
Locomotive 242-A.1. has shown exceptional tractive capacity. During running over the former P.L.M. main lines i.h.p. of 5,000 to 5,500 and equivalent d.b.h.p. of 4,000 to 4,200 were frequently recorded at speeds of between 45 and 75 m.p.h. On three runs in ordinary service between Dijon and Laroche trains weighing 735, 770, and 847 tons were accelerated from a 17 m.p.h. slack to 63, 60, and 56 m.p.h. on a continuous rising gradient of 1 in 125, fully equal in severity to the southbound climb from Penrith to Shap summit. Subsequently No. 242-A.1 accelerated a 770-ton train from a dead start to 72 m.p.h. on an almost continuous 12-mile climb at 1 in 200, while running on the Nord main lines. This performance involved the development of an average d.b.h.p. of 3,820 (equivalent) over ten miles of the climb. This locomotive is now working express trains weighing up to 800 tons over the Paris-Brest main line between Le Mans and Rennes, where there are long banks at 1 in 200. These performances show that No. 242-A.1. can claim a tractive capacity in no way inferior to that of the latest S.N.C.F. express electric locomotive.

New Standard Designs

After the successful running of this locomotive, new designs for high-speed 4-6-4, heavy passenger 4-8-4, mixed traffic 2-8-4, and heavy freight 2-10-4 type locomotives were prepared under Monsieur Chapelon's direction. All these designs are three-cylinder compounds with 320 lb b.p.

For heavy freight service an experimental 2-12-0 was put into traffic in 1949. It has two h.p. and four l.p. cylinders. The h.p. cylinders are mounted between the frames and drive on the fourth coupled axle; two of the four l.p. cylinders, mounted in line across the frames, drive on the third

(*Continued on page* 408)



Three-cylinder 4-8-4 *compound, rebuilt from Etat* 4-8-2 *simple*

Construction of British Railways Standard Coaches—3*

Method of roof construction, and manufacture of pressings and vestibules

THE roof of the coach is designed as a standard unit and is applicable to all coaches, irrespective of type. The complete roof erection is carried out in an assembly jig. The roof frame, consisting of cantrails, purlins, and carlines, is assembled in a jig, each member being correctly positioned and securely held during welding by a series of roller clamps and fulcrum brackets. The cantrails are made up of approximately 8 ft. lengths and are welded together in a separate jig. The roof erection jig consists of three longitudinals, machined all over, supported on cast-iron pedestals, equally spaced in the shop floor.

The outer members of the jig are machined on the top face to the shape of the cantrail and to the correct centres, the distance between cantrails therefore remains constant. To the centre longitudinal is welded a series of brackets which locate purlins and carlines to key positions, *i.e.*, at the join of frame members. After welding the roof skeleton, the galvanised roof sheets are held in position during welding by a series of spring-steel bands to the ends of which are riveted fulcrum brackets, which are clamped to brackets on the outer longitudinals of the assembly fixture. The roof sheets are assembled to the roof structure working from the centre sheet outwards. Guttering is of light-alloy extruded section and is secured to the cantrails by stainless-steel rivets or set screws. The design of the jig ensures simplified building combined with accuracy.

Manufacture of Pressings

To avoid duplication of equipment certain workshops have been equipped for the supply of pressings required for other Regional shops. With a view to simplifying the preparations of specifications and drawings the pressings used in the body and roof structure are manufactured from standard sections as far as possible. The end corner pillars and intermediate end pillars are of heavier section for additional strength.

The pressings are manufactured from cold-drawn mild-steel sheet 10 and 14 s.w.g. and are first cut to size in a fluid-driven 12-ft. guillotine shears. Pressing operations are carried out on a 500-ton mechanical, single acting press with air cushion equipment. In the design of the press tools allowance has been made for overbending to compensate for the spring-back of the material. The "Z" section pillars are produced from standard "top-hat" sections cut through the centre line in a 6-ton bench press.

The abrasive method of end trimming the pressings is carried out. Two machines are used for this purpose, and are fitted with form and distance jigs operated by compressed air, which locate pressings for cutting to correct length. A 120-ton press brake is used for forming channel and angle sections. Pressings are degreased before receiving a coat of rust inhibiter paint.

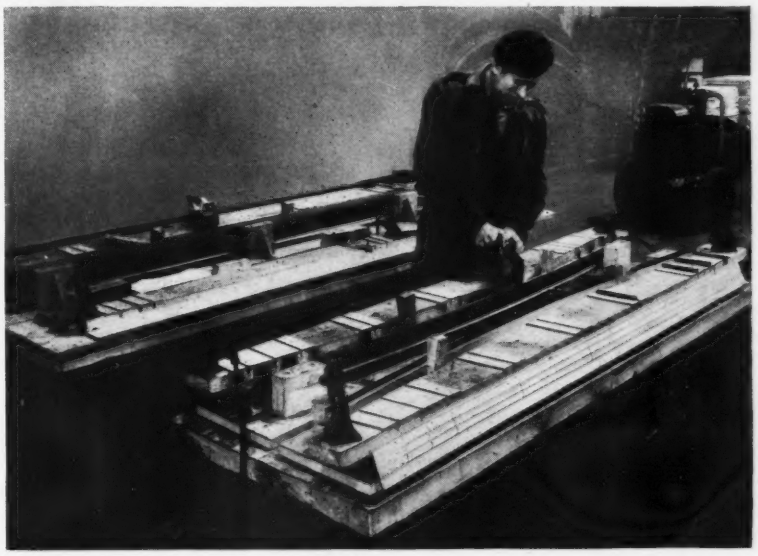
Vestibule Gangway Production

The vestibule gangways required for the construction programme in all Regional workshops are being built at York Carriage Works. A progressive system of manufacture has been instituted and an output of 40 gangways a week is being maintained. A considerable amount of fabrication by welding is carried out; the vestibule buffer is entirely fabricated from mild-steel plate. Each gangway consists of three main components, vestibule buffer, top spring control gear, and vestibule faceplates.

The vestibule buffer provides the foundation of the gangway and is built up to form an angle-plate section reinforced by stiffening ribs. The different sections are obtained by profile template gas-cutting from mild-steel plate. The plates are placed in a progressive system of assembly jigs, and are tack welded, the final welding being carried out after removal from the fixture. The top spring control gear provides both resilience and articulation to the top half of the mating gangway faceplates, and consists of four spring-loaded telescopic tubes connecting the faceplate with its appropriate body end, and is arranged in "V" formation. Solid-drawn tubes are used as coil-spring containers into the ends of which are welded the end fulcrum brackets. Trunnion type welding fixtures are used to ensure correct alignment of the bracket faces.

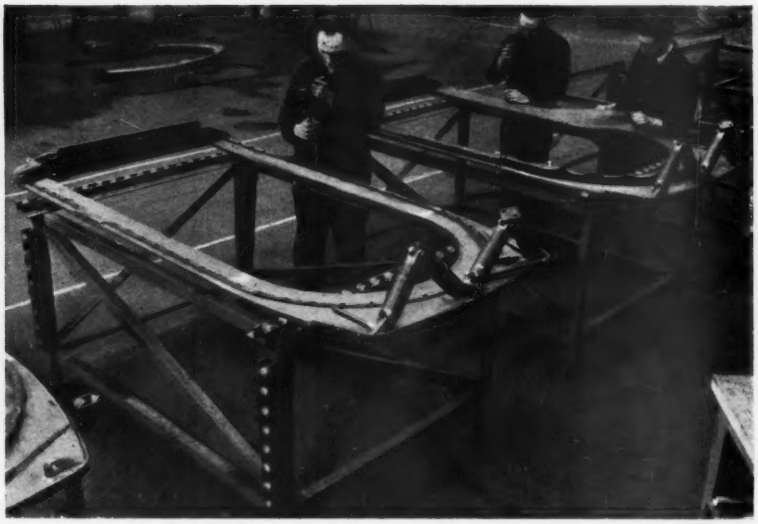
The faceplate consists of a large horizontal top plate with two vertical legs attached. The plates are not only used to provide the cross-sectional contour to the gangway, but also to act as mating faces when two vehicles are connected. The three members are of $\frac{5}{8}$ in. mild-steel plate and are gas profile cut to shape, the legs being subsequently jig drilled for the attachment of the vestibule buffer. The welding of the top plate and the legs is carried out in an assembly welding fixture which is also provided with additional fixtures for correct positioning of spring control brackets, check chain brackets, windshield packing strips, and the through electric control coupling brackets. Assembly of vestibule gangway components, together with the plasticised asbestos diaphragm and its fastenings, is carried out on a progressive system.

The layout consists of a series of worktables of convenient height fitted with conveyor rollers; hinged bridge-type conveyors are used to connect the worktables for the transfer of materials from one table to another. Adjacent to the worktables are arranged a series of storage racks for holding materials required at the various stages of production; the assembly-line is serviced by a 10-cwt. overhead runway. The brackets for carrying the spring control gear are welded to the faceplate, after which it is placed on the conveyor worktables, where the studs for securing the diaphragm clamping bands are welded



Alternative method of locating timber securing studs on frame members

* Parts 1 and 2 of this article appeared in our issues of September 21 and 28



Layout for building vestibule gangways ; the tables are connected by bridge type rollers

into position by means of a stud welder positioned by a template.

The vestibule buffer is next fitted to the base of the faceplate legs, secured by means of $\frac{5}{8}$ in. dia. rivets; the hood fixing strip is stitch welded to the faceplate at this stage. The control springs assembled in the casings are attached to the brackets already welded to the faceplate, and the diaphragm secured in position. The vestibule buffer is attached to the spring-loaded buffer plunger by a $1\frac{1}{8}$-in. bolt.

A further bracket centrally disposed between these brackets is used for securing the limiting chain. After erection of the faceplate to the body ends, the free side of the diaphragm is secured to the timber frame forming the gangway doorway by means of two retaining bands attached by wood screws.

Securing the Timber Fairings

Blockboard and timber veneers are used for the interior of the passenger stock, and are screwed to timber fairings attached to the standing pillars, floor, roof framing, and so on. The timber fairing securing studs are stud-welded to the body framing members and are located before welding in their relative positions by means of a template jig. That used for locating the window glazing studs is made of aluminium sheet and is positioned between the window standing pillars and top and bottom light rails.

Superimposed on the inside face of the jigplate are a series of smaller templates grooved to locate an electric stud-welder. Attached to the base of the stud-welder is a grooved plate which locates in the recesses secured to the template. The stud is inserted in a holder attached to the stud-welder which is correctly positioned by the jig; the current is switched on and the metals fused. A new type of stud fixing jig has recently been developed in which this operation will be carried out to frame members before actual assembly.

The frame members are located in a jig and securely clamped in position. Since the number of studs varies, depending on the position occupied by the frame member, a diagram is secured to the front face of the jig. Two colours, red and green, are used to indicate the position of the studs.

In addition to the standardisation of the body structure a degree of standardisation has also been accomplished in the interior design. The floor is of unit construction and consists of blockboard sections the sizes of which have been standardised. A feature of the design of the interior of the coaches is the extended use of fire-proofing materials, which include P.V.C. plasticised asbestos for vestibule gangway curtains, and the lagging of steam pipes with a similar material or with aluminium foil, while the finish of the interior timber veneers is in a non-inflammable matt synthetic varnish.

(Concluded)

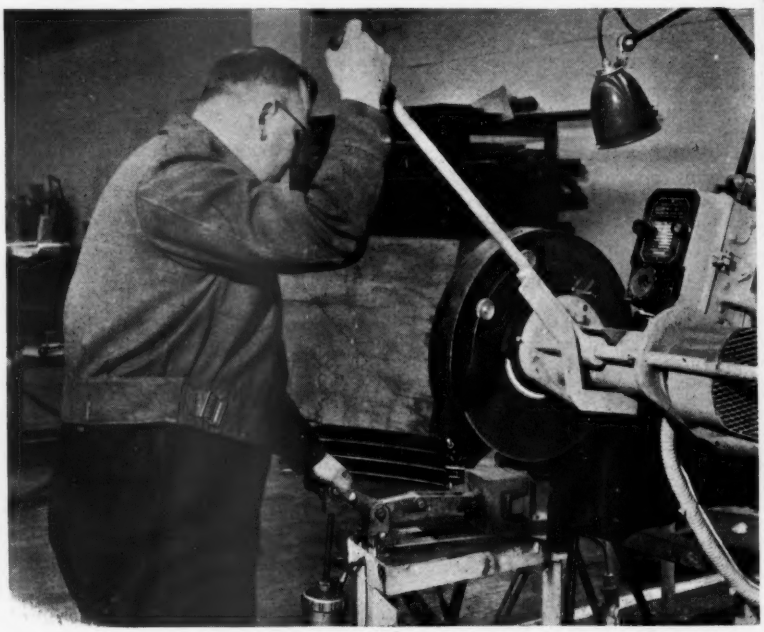
Recent French Steam Locomotive Practice—1

(Concluded from page 406)

coupled axle and the inside pair on the second coupled axle. The locomotive has 4 ft. 7 in. coupled wheels, 270 lb. b.p. and a total weight of 135 tons; 118 of which are adhesive.

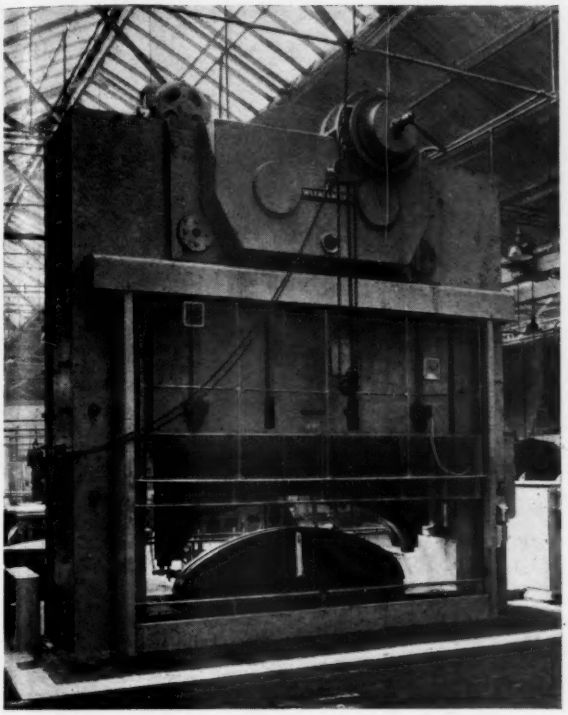
A revolutionary development in this locomotive is the supplementary superheater, through which steam from the h.p. cylinders is passed before being admitted to the l.p. cylinders. Steam jackets have been fitted to the l.p. cylinders to reduce condensation losses, permitting the use of a lower degree of superheat than otherwise would have been required. The increase in evaporative heating surface thus made possible has enabled the boiler efficiency to be increased.

This locomotive has proved outstandingly successful. The steam admitted to the l.p. cylinders has a temperature 90 per cent. of that at which steam is admitted to the h.p. cylinders. The use of the re-supereheater has enabled the thermal efficiency of the locomotive to be appreciably increased, and Monsieur Chapelon has stated that this development enables him to expect further important progress.

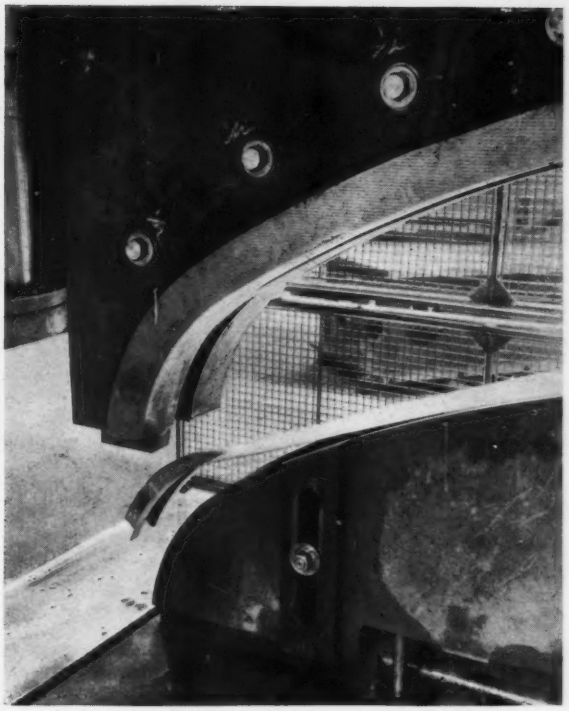


End trimming of carlines using the abrasive method; the locating fixture is operated by compressed air

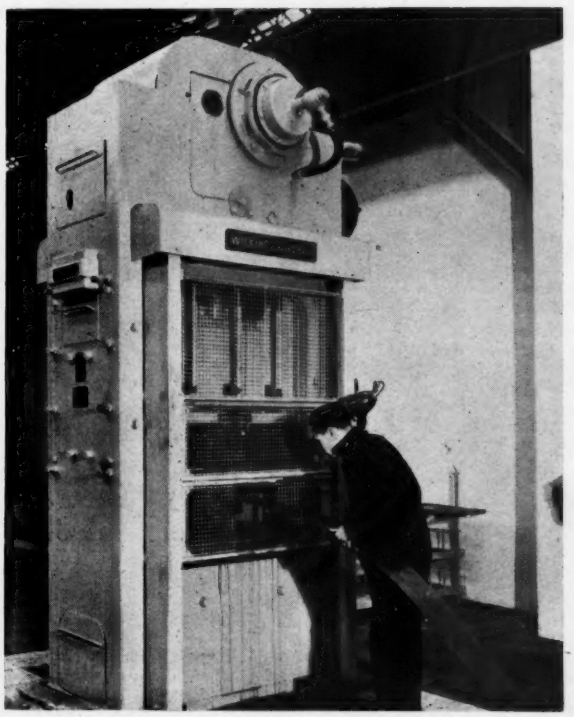
Construction of British Railways Standard Coaches—3



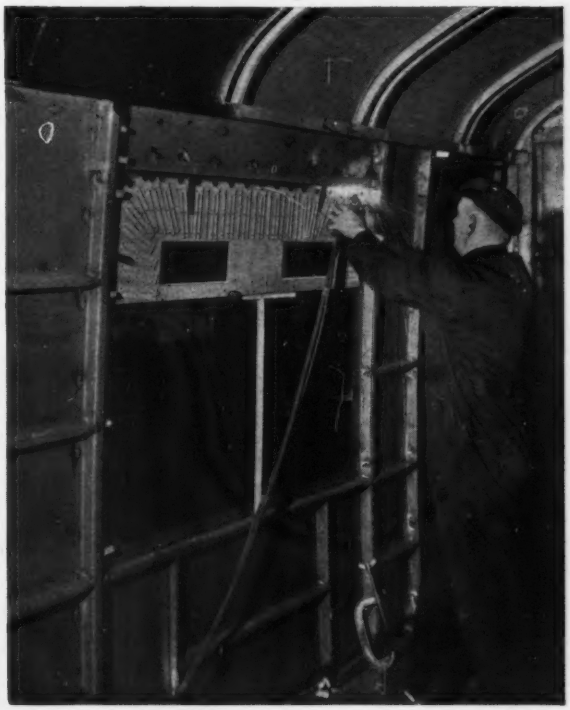
Mechanical press with air-cushion equipment for final pressing of the car line



A car line positioned in the die for complete forming into a " top hat " section

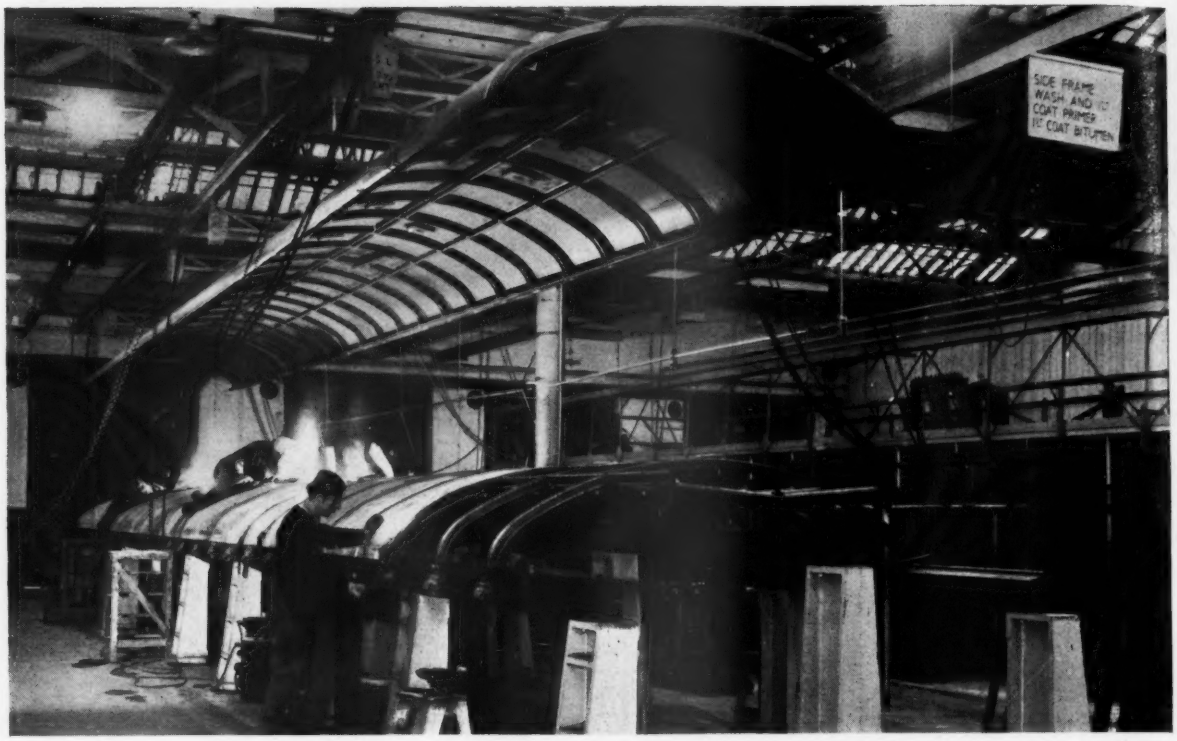


First operation in forming the car line into a " top hat " section from steel sheet



Locating fixture used for positioning the stud-welder for welding window fairing studs

Construction of British Railways Standard Coaches—3



The roof sheets are secured to the skeleton frame by spring steel bands. The completed roof is moved by overhead runway to the erection bay immediately opposite

Timber fairings are secured to underframe members to which the floor boards are bolted

RAILWAY NEWS SECTION

PERSONAL

The Western Region of British Railways has announced the appointment of Mr. N. H. Briant, District Operating Superintendent, Chester, as District Operating Superintendent, Paddington.

Mr. Ehsan Elahi Malik has been appointed Assistant Public Relations & Publicity Officer, North Western Railway, Pakistan, in succession to Mr. C. D. Malik.

Coras Iompair Eireann has announced the appointment of Mr. P. Heneghan as Operating Superintendent, with effect from October 1; he had formerly been Assistant Operating Superintendent.

Mr. W. T. Langbein has been appointed Assistant Chief Civil Engineer, New Zealand Government Railways, and has been succeeded as Chief Inspecting Engineer by Mr. I. M. Malcolm, formerly Resident Civil Engineer.

Mr. R. A. Emerson, Assistant Chief Engineer, Canadian Pacific Railway, who, as recorded in our October 5 issue, has been appointed Chief Engineer, graduated at the University of Manitoba and joined the Canadian Pacific Railway in 1935 in British Columbia. He became Roadmaster at Portage, Manitoba Division, in 1939, Divisional Engineer at Brandon, Manitoba, in 1941 and went to a similar post at Moosejaw, Saskatchewan, in 1943 Mr.

Mr. C. K. Bird, Chief Regional Officer, Eastern Region, has agreed to become Chairman of the board of the Railway Benevolent Institution for the year 1952.

Mr. Edward Rhodes, Manager of the Sheffield Branch of Thos. Cook & Son Limited, is retiring on October 31, and is to be succeeded by Mr. Noel Taylor, at present Manager of the company's Sunderland office.

Mr. R. H. Dawson. C.B.E., M.Inst.T., General Manager, Gold Coast Railway, 1926-32, whose death we recorded briefly last week, joined the London & North Western Railway, as a superior apprentice in 1892. After being with the Outside

Mr. John E. Armstrong
Chief Engineer, Canadian Pacific Railway, 1939-51

Mr R. A. Emerson
Appointed Chief Engineer, Canadian Pacific Railway

The late Mr. R. H. Dawson
General Manager, Gold Coast Railway, 1926-32

Mr. John E. Armstrong, Chief Engineer, Canadian Pacific Railway, who, as recorded in our October 5 issue, has retired, has been in the railway service since 1900. He joined the C.P.R. in 1912 as Assistant Engineer at Montreal and became Assistant Chief Engineer in 1928 and Chief Engineer in 1939. He is a Past President of the Engineering Institute of Canada, the American Railway Engineering Association and the Canadian Railway Club of Montreal.

We regret to record the death, at the age of 79, of Mr. A. J. Bray, who was Registrar of the Dunlop Rubber Co. Ltd. from June, 1911, to December, 1944.

British Railways, Southern Region, has announced the appointment of Mr. G. F. George, Assistant to District Engineer, Purley, as Assistant (General), Civil Engineer's Department, Waterloo.

Mr. A. Stringer, formerly Chief Clerk to the Secretary of the Hotels Executive, has recently been appointed Assistant to Secretary. He entered the service of the L.S.W.R. in 1917 and occupied various positions in the Secretary's Department of that company and the Southern Railway, until his appointment as Chief Clerk to the Secretary of the Hotels Executive in 1948.

Emerson was stationed at Vancouver for four years from 1944 as Assistant District Engineer and District Engineer, before going to Montreal as Engineer of Track in 1948, and subsequently was appointed Assistant Chief Engineer.

Mr. A. C. Newby, formerly Planning Engineer at Charlton Works, London Transport Executive, has been appointed Assistant Works Manager (Trams & Trolleybuses) in the Department of the Chief Mechanical Engineer (Road Services). Mr. Newby had been Planning Engineer since 1947.

We regret to record the death on October 3, at the age of 83, of Sir John Milne Barbour, Bt., J.P., D.L., a Director of the Great Northern Railway Company (Ireland). He was, for many years, prominent in Northern Ireland politics and had been Financial Secretary to the Ministry of Finance, 1921-37; Minister of Commerce, 1925-41; and Minister of Finance, 1941-43. He was High Sheriff for Co. Antrim in 1905, and for Co. Down in 1907, President of the Belfast Chamber of Commerce in 1911 and President of the Royal Ulster Agricultural Society from 1925 to 1930 and since 1931. He became a Director of the G.N.R.(I.) in 1909, and was knighted in 1943.

Goods Manager, Northern Division, for some years, he subsequently became District Goods Agent, New Mills. In 1912 he was appointed District Goods Superintendent, Ceylon Government Railway, and was promoted Assistant Traffic Manager in 1914. He was on war service in East Africa between 1916-19 and was appointed Deputy Traffic Manager, Ceylon Government Railway, in 1919, and Traffic Manager in 1922. In 1924 he accepted the appointment of Deputy General Manager, Gold Coast Railway, and became General Manager in 1926. Mr. Dawson retired in 1932.

LONDON MIDLAND REGION APPOINTMENTS

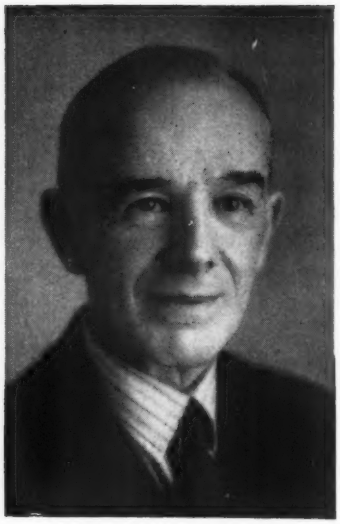
The following appointments are announced by the London Midland Region:—

Mr. A. Tims, District Engineer, Barrow, to be District Engineer, Blackburn.

Mr. A. Kenyon, Assistant (Staff) Operating Superintendent's Department, Euston, to be Staff Assistant to Operating Superintendent, Euston.

Mr. J. Lever, District Estate Surveyor, Preston, to be District Estate Surveyor, Liverpool.

Mr. W. Ashton, Clerk, District Passenger Superintendent's Office, Manchester, to be Assistant to District Passenger Superintendent, Manchester.



Mr. H. S. Ewens

Assistant to the Chief Accountant, Western Region, 1948-51

Mr. H. S. Ewens, Assistant to the Chief Accountant, Western Region, who retired on September 30, entered the service of the Barry Railway in the Shipping Department at Barry in March, 1904, and after experience in the Stores Department, was transferred to the Accountant's Office of that railway in August, 1917. On the amalgamation of the Barry Railway with the Great Western Railway in 1922, he was transferred to the Chief Accountant's Office, Paddington, and after holding several responsible positions in that Office, was appointed Book-keeper in 1934, and Assistant to the Chief Accountant in 1948.

Mr. C. A. Colpitts has been appointed Assistant Chief Engineer of the Canadian Pacific Railway.

Mr. W. B. Robson has relinquished his position as Head of Publicity & Order Departments, with Brookhirst Switchgear Limited, on his appointment as General Manager of Cantie Switches Limited.

Mr. Reginald F. Norris has relinquished his position with the Oil Engine Division of the Brush Aboe Group to become General Manager of D.M.M. (Machinery) Limited.

The British Aluminium Co. Ltd. has announced that Mr. S. M. Lawrence has been appointed Assistant Sales Manager, Unwrought & Special Products, in place of Mr. R. M. Warrington, who will be relinquishing his appointment with the company on October 31. Mr. O. M. Bruce Payne has taken over responsibility for the Technical Service Section of the Development Department, under the Development Manager, in place of Mr. Lawrence.

Lt.-Colonel R. S. Goodhind, formerly Assistant to District Goods Superintendent (Mineral), Sheffield, Eastern Region, British Railways, has been appointed Transport & Traffic Superintendent, Newton Chambers & Co. Ltd. Mr. E. Norman, Assistant Transport Manager, Newton Chambers & Co. Ltd., has been appointed Road Transport Manager, and will continue to be responsible for the operation of the company's road transport and arrangements for haulage of goods by road.

The late Mr. C. E. Spurgeon

Chief Inspecting Engineer in London to the Egyptian Government, 1945-48

We regret to record the death on October 5, at the age of 72, of Mr. Christopher Edward Spurgeon, C.B.E., M.I.Mech.E., Chief Inspecting Engineer in London to the Egyptian Government, 1945-48, and a former Deputy General Manager of the Egyptian State Railways. He gained his early locomotive and engineering experience at Swindon, G.W.R., and University College, London. In 1904 he was appointed an Assistant Locomotive Superintendent on the North Western Railway, India. He was promoted to District Locomotive Superintendent in 1911, and, after varied experience in the design, layout, and construction of locomotive repair shops, and oil-fired locomotives, and in charge of various districts, was promoted to officiate as Deputy Chief Mechanical Engineer. In 1922 he was put in charge of the workshops and later was appointed Superintendent, Mechanical Workshops, N.W.R. In 1928 Mr. Spurgeon was appointed to officiate as Chief Mechanical Engineer of that railway, was confirmed in that post in 1929, and retired from service in India with that rank in May, 1934. In November of the same year he was appointed Chief Mechanical Engineer, Egyptian State Railways, of which he became Deputy General Manager in 1937. In 1940 the Second Order of the Nile and in 1943 the C.B.E. were conferred on Mr. Spurgeon in recognition of his services on the Egyptian State Railways during the war. In 1945 he was appointed Chief Inspecting Engineer in London to the Egyptian Government, from which position he retired in 1948.

Sir Richard Ernest Yeabsley has been appointed to the board of Directors of F. Perkins Limited.

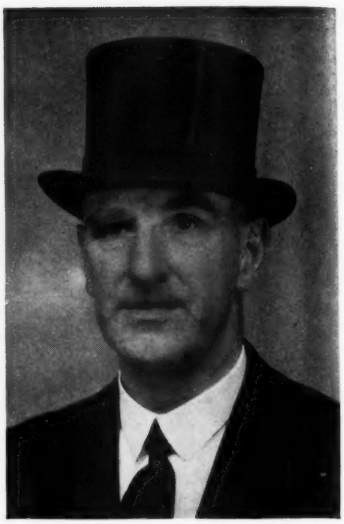
The following notifications appeared recently in *The London Gazette* under the heading of Territorial Army—Royal Engineers: Engineer & Railway Staff Corps:—

Colonel M. Beevor resigns his commission, June 30, 1951

Major Frank Aubrey Pope, C.I.E., to be Colonel, June 30, 1951.

Harold John Boyer Harding, B.Sc., M.I.C.E., to be Lt.-Colonel, May 26, 1951.

Horace Denton Morgan, M.Sc., M.I.C.E., to be Major, June 29, 1951.



The late Mr. Thomas Tinning

Stationmaster, Glasgow Central, Scottish Region, 1944-51

We regret to record the death on September 30, at the age of 60, of Mr. Thomas Tinning, M.B.E., Stationmaster, Glasgow Central, Scottish Region. He joined the service of the Caledonian Railway at Greenhill in 1905, and after holding a number of clerical posts at stations and District Offices, including District Inspector and District Relief Clerk, was appointed Assistant Stationmaster, Glasgow Central, in 1932. Mr. Tinning became Stationmaster, Glasgow Buchanan Street, in November, 1939, and three years later was appointed to a similar position at Glasgow St. Enoch. In July, 1944, he was appointed Stationmaster, Glasgow Central.

Mr. A. R. Wright has been elected to the board of Directors of Lansing Bagnall Limited.

We regret to record the death on October 2 of Mr. J. E. MacLaren, M.I.Mech.E., M.I.P.E., M.Inst.W., Managing Director of B.S.A. Tools Limited, Burton, Griffiths & Co. Ltd., and B. G. Machinery Limited, and a Director of the Birmingham Small Arms Co. Ltd.

Mr. F. H. Eliot, Assistant for Outdoor Machinery to the Executive Officer (Electrical Engineering New Works & Development), Railway Executive, who, as recorded in our October 5 issue, has retired, is 65. He studied at Goldsmiths' College and the City & Guilds Institute, and is a Member of the Institute of British Engineers. He began his career in the drawing office of the Engineer-in-Chief, G.E.R., Liverpool Street, in 1901, and was subsequently transferred to the Electrical Department. During this period he assisted in the preparation of drawings for the layout of plant for the proposed Stratford Power House and worked on schemes for the mechanical coaling of ships at Parkeston Quay. In 1924 he was appointed Chief Draughtsman in the Office of the Electrical Engineer, L.N.E.R., Kings Cross, and later became Chief Draughtsman & Technical Assistant. On the formation of the Railway Executive Electrical Engineering New Works & Development Organisation in March, 1950, Mr. Eliot was appointed Assistant for Installations, Lighting & Appliances, the designation of which post subsequently became Assistant for Outdoor Machinery.

New East African Railways & Harbours Tariff

Common system of rates, and uniform regulations introduced

A new tariff of rates and charges for the railway, road and inland water services of the East African Railways & Harbours was introduced on October 1. Mr. A. Dalton, General Manager, E.A.R. & H., in a broadcast explaining the new system, said that the objects of the new tariff book were to establish a common system of charges and a uniform set of regulations which would apply throughout East Africa and to revise the present level of charges to bring revenue more into line with present-day costs. In fact, one of the conditions of amalgamation of the Kenya-Uganda and Tanganyika systems was the adoption of a uniform tariff book.

The annual report for 1950 shows a decline in net revenue compared with 1949. Rising costs have been the predominant factor of the war and post-war years. In recent months, the upward trend has tended to be steeper. In a period of steeply rising costs, the administration is forced to make substantial additions to its capital assets. New railway stock and engine power are needed to meet increased traffic demands and to replace worn-out assets; new crossing stations have to be opened and marshalling and goods yards have to be expanded to increase line capacity.

The greater part of railway revenue comes from three main groups of charges: (i) goods class rates; (ii) goods special rates (largely confined to export traffic and primary commodities moving internally); (iii) passenger fares and luggage and parcels rates. In addition there are miscellaneous charges for services rendered by the administration, such as demurrage, storage, sidings charges, local haulage, handling, and wharfage, to ensure that every commodity and all traffics will make a reasonable contribution to the new income level required.

Generally the Kenya-Uganda class rates were more generous to short-distance traffic than the Tanganyika class rates. A class rate structure has been evolved which results in short-distance charges being somewhat higher than the existing Kenya-Uganda charges, while long-distance traffic will pay only slightly more than formerly or even less.

Formerly, certain primary commodities, such as maize, wheat flour and grains, moved at class rates subject to a maximum charge. With the unification of the two systems and the possibility of goods moving over far greater distances on throughout mileages, as also on economic grounds, it has been necessary to abolish maximum charges. To compensate, the class rates structure is generously tapered over the longer hauls and, in any event, all primary commodities will move at special rates under the new tariff.

Export Traffic in Primary Commodities

Up to now, low rates have obtained for the movement of export traffic and primary commodities moving internally, especially in Kenya-Uganda, but the value of these commodities has undergone great change since the old tariff was fixed.

In the new tariff book, export rates have been increased but the increase in the freight rate is nowhere commensurate with the increase in price. Coffee, for example, is expected to contribute an additional £75,000 to revenue per annum. Again, cotton is expected to yield an increase of £80,000 approximately on 70,000 tons exported in 1950, an increase of 23s. per ton, yet the price of cotton increased from £45 in 1939 to £460 in 1950.

In the case of cotton seed the percentage freight increase approximates more to the percentage increase in world prices, but the old rate was considerably below the bare cost of haulage and the new rate will barely meet this cost. Sisal rates have been designed to bring in an additional £27,000 revenue. Sugar is expected to contribute an additional £36,000, both from internal and export traffic, and once more the increase is light compared with increased value.

Grains, including flours and pulses, are in the aggregate expected to contribute little additional revenue. The new grain rates will discourage uneconomic long hauls for internal movements. Formerly, the existence of a maximum rate in Kenya-Uganda tended to encourage cross movements and unnecessary long hauls to and from milling centres. This has been abolished in the new tariff with all other maximum rates. In the result, there should be little increase, if any, in retail prices.

Low rates continue to apply to such commodities as cattle cake, fertilisers, and manures but they are greater than the former rates which in almost all cases failed to meet out-of-pocket costs of haulage. There is a limit to the extent to which a transport system can continue to subsidise any particular industry and the new rates for these commodities will just cover working costs.

The livestock rates in Kenya-Uganda were low—25 per cent. lower than the rates before 1935. For the majority of livestock movements, the loaded haulage on which freight is paid is equalled by empty haulage on which no freight is paid; in many cases the empty haulage is greater than the loaded haulage because a cattle wagon has to be worked to the forwarding station from a depot station and from the destination back to the depot station. If livestock traffic was to pay for the whole of the costs to which its movement gives rise, the cattle rate would be such as would cover the cost of the double journey, but this would place a heavy burden on the industry. In the result, while in Kenya-Uganda livestock charges are increased considerably, the return to the railway for the service rendered will still be low.

A motor vehicle traffic scale has been evolved which takes account of the fact that in most cases the transport of a vehicle necessitates the sole use of a wagon. Charges therefore are based on the vehicle unit irrespective of weight or size, unless a vehicle necessitates the use of a bogie wagon, when the rate will be increased by 50 per cent. The increase in the freight charge for any distance or any make of car is small compared to the rise in car values since 1939, or even the recent rise in prices a few months ago. Some concession is still granted for those who take their cars with them when going on holiday. For the return journey the vehicle charge will be 1½ times the single journey rate.

While passengers making single journeys are not required to pay much more than formerly, a significant change takes place in the basis on which return fares for first and second class are charged. The former concession of 1½ times the single fare for the return journey is altered to double the single journey fare less 10 per cent. There are some slight increases in certain first class fares. Third class fares are increased somewhat, and batch rates are abolished. Luggage and parcels rates remain substantially the same as they are in Kenya-Uganda, but certain rates for small parcels have been abolished.

Road Services

Tanganyika Road Services up to now have been a financial liability. To provide an efficient and reliable service it has been necessary to purchase new and expensive vehicles on a large scale. In addition, considerable sums have been expended on the provision of up-to-date workshops, and so on, to ensure efficient maintenance. As financial stability must be achieved, all rates below the normal class rates have been cancelled. The class rates themselves remain substantially the same as hitherto.

In all rail-road bookings the rail and road charges are raised separately and the principle of throughout mileages does not apply to them. There are changes in the charges for ancillary services designed largely to achieve uniformity and bring the charges more into line with the cost of the service rendered. Demurrage charges have been considerably increased to ensure the prompt clearance of wagons, but even so, the charges do not nearly compensate for the loss in wagon capacity of a wagon detained for loading or unloading.

It can be stated unequivocally that the new East African Railways & Harbours tariff will compare favourably with those of other colonial territories. The new first class single journey fare, for example, is considerably less over all distances than those of Nigeria and the Gold Coast: third class fares are less than those of the Gold Coast and, for all but short-distance journeys, are less than those in Nigeria. The charges on such major commodities as wheat, timber, cotton and fertilisers are all well below those in the West African territories. In the U.S.A., rates have been increased on nine occasions since the end of the war. On the British Railways charges were increased twice during the war and have been increased on three occasions since.

The new tariff book introduces standard weights and distance measurements, the 100-lb. unit and the mile, thus abolishing the metric system in Tanganyika as far as the railways are concerned. As a safeguard to any public interest which might be unduly affected by the new tariff, an Appeals Committee of the Transport Advisory Council will be constituted, which will receive appeals against specific provisions or charges provided in the tariff book up to December 31, 1951. Any decisions will be retrospective from October 1.

MAXIMUM PRICES FOR SULPHURIC ACID.—The Minister of Materials has made an Order which came into effect on October 1 permitting increases on the maximum prices of sulphuric acid. These increases are due to the rise in the price of imported pyrites and in freight rates for both sulphur and pyrites. Copies of the Order, the Sulphuric Acid (Prices) (Amendment) Order, 1951. (S.I. 1951, No. 1717) is on sale at H.M. Stationery Office, Kingsway, London, W.C.2, and branches, price 2d.

B.T.C. Plans for Winter Freight Movement

Co-operation between Railway and Road Executives and industry; resources pooled to keep traffic moving

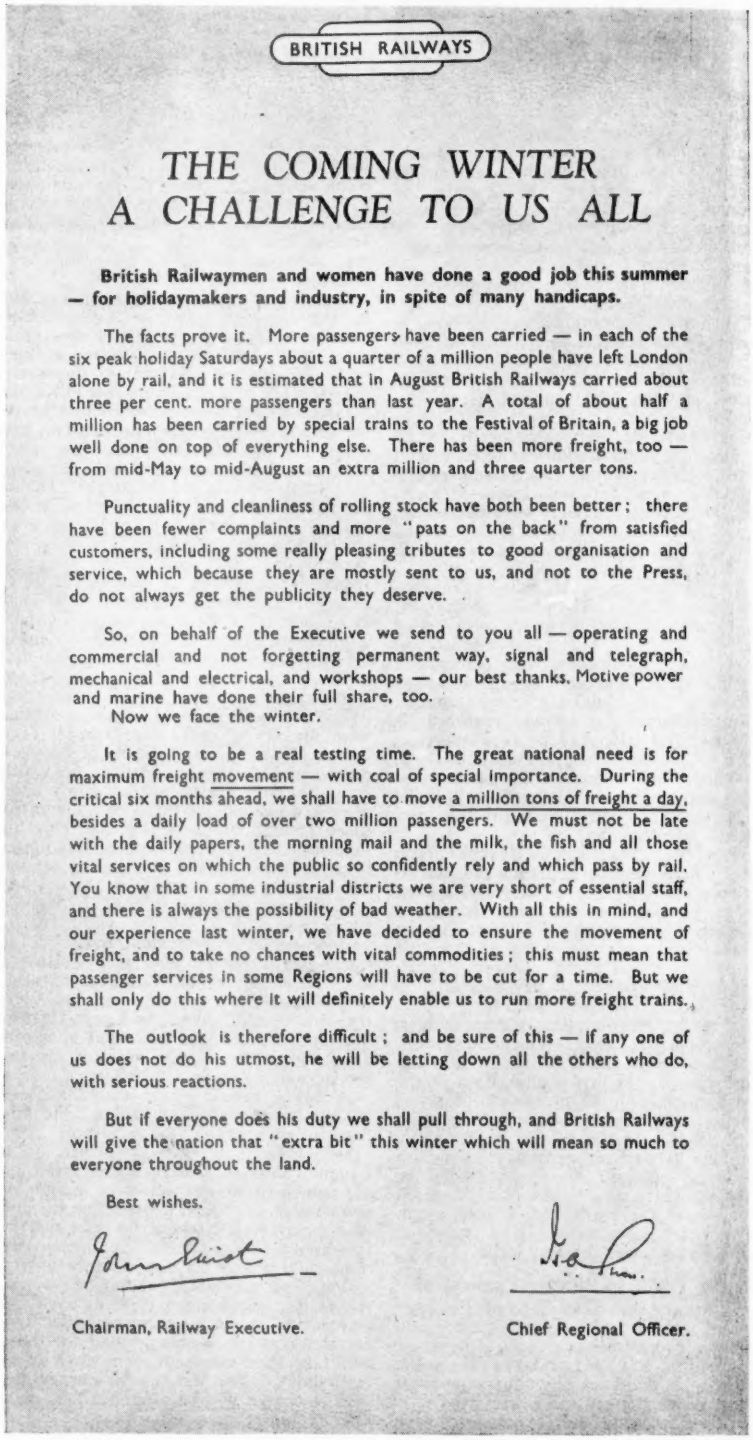
Mr. F. A. Pope, Member of the British Transport Commission, accompanied by Mr. John Elliot and Major-General G. N. Russell, Chairman of the Railway and Road Haulage Executives respectively, and by representatives of the Federation of British Industries, the Association of British Chambers of Commerce and the National Farmers' Union, announced at a press conference held at the Charing Cross Hotel, London, on October 10 a plan whereby agriculture, commerce and industry are to co-operate with the Railway and Road Haulage Executives to deal with freight traffic during the coming winter. It was explained that early this Spring, the Railway and the Road Haulage Executives made a detailed survey so as to forecast the volume of traffic, mainly re-armament materials, fuel, food, exports and products for home consumption, to be moved during the winter, and throughout the summer they have made all forward preparations within the resources available.

Traffic officers of the Railway Executive have re-examined the heavy flows of traffic, the facilities available to handle them, and the staff complement required, particularly in the industrial areas of London, the Midlands, Manchester, South Wales, and the West Riding of Yorkshire, where difficulties arising mainly from the shortage of operating staff are most likely to occur. Every resource of the unified British Railways, it was stated, has now been mobilised for the coming winter, and not since the war have British Railways planned a transport operation on such a scale to keep pace with national industrial development.

To ensure that the maximum tonnage of freight is carried by rail and road, joint discussions under the chairmanship of a Member of the B.T.C. have been taking place with the F.B.I. and the Association of British Chambers of Commerce. The outcome now announced is that with the collaboration of these two bodies and the N.F.U., a temporary nation-wide organisation is being set up to advise traders on their transport problems and to enlist their co-operation in every district; the aim is the maximum effective use of the combined resources of transport in Great Britain.

Winter Transport Organisation

In each of the 51 railway districts a local Joint Committee, comprising the Railway District Commercial Superintendent, the District Manager of British Road Services, and representatives, as required, of the F.B.I., the Chamber of Commerce, and the N.F.U., will examine, as emergency arises, such questions as the re-routing of certain railway traffics, diversions to road, and any special measures to relieve congestion such as reducing the number of wagons required to move a given quantity of traffic, obtaining better loading and speeding up wagon clearance. The local groups will thus support the efforts of the Railway and Road Haulage Executives to deal with traffic which has to pass through the difficult areas. The local groups will be kept posted of any changes in the transport situation which affect their locality and they will in turn be responsible for keeping industrialists, traders and farmers informed. These local groups will be set up at once throughout the country, includ-



BRITISH RAILWAYS

THE COMING WINTER
A CHALLENGE TO US ALL

British Railwaymen and women have done a good job this summer — for holidaymakers and industry, in spite of many handicaps.

The facts prove it. More passengers have been carried — in each of the six peak holiday Saturdays about a quarter of a million people have left London alone by rail, and it is estimated that in August British Railways carried about three per cent. more passengers than last year. A total of about half a million has been carried by special trains to the Festival of Britain, a big job well done on top of everything else. There has been more freight, too — from mid-May to mid-August an extra million and three quarter tons.

Punctuality and cleanliness of rolling stock have both been better; there have been fewer complaints and more "pats on the back" from satisfied customers, including some really pleasing tributes to good organisation and service, which because they are mostly sent to us, and not to the Press, do not always get the publicity they deserve.

So, on behalf of the Executive we send to you all — operating and commercial and not forgetting permanent way, signal and telegraph, mechanical and electrical, and workshops — our best thanks. Motive power and marine have done their full share, too.

Now we face the winter.

It is going to be a real testing time. The great national need is for maximum freight movement — with coal of special importance. During the critical six months ahead, we shall have to move a million tons of freight a day, besides a daily load of over two million passengers. We must not be late with the daily papers, the morning mail and the milk, the fish and all those vital services on which the public so confidently rely and which pass by rail. You know that in some industrial districts we are very short of essential staff, and there is always the possibility of bad weather. With all this in mind, and our experience last winter, we have decided to ensure the movement of freight, and to take no chances with vital commodities; this must mean that passenger services in some Regions will have to be cut for a time. But we shall only do this where it will definitely enable us to run more freight trains.

The outlook is therefore difficult; and be sure of this — if any one of us does not do his utmost, he will be letting down all the others who do, with serious reactions.

But if everyone does his duty we shall pull through, and British Railways will give the nation that "extra bit" this winter which will mean so much to everyone throughout the land.

Best wishes.

Chairman, Railway Executive. Chief Regional Officer.

Poster message from the Chairman, Railway Executive, and the Chief Regional Officer to British Railways staff, calling for co-operation in winter freight movement campaign. The signature of the C.R.O. in the Regional issue reproduced is that of Mr. H. A. Short, North Eastern Region

ing districts which will not be directly affected and which find no difficulty in moving their own traffic, as the better use of transport resources by more economic loading and so on will help other districts where movement may become difficult. Liaison at the highest level will be in London between leading representatives of the two Executives and the three trading and industrial organisations, meeting under B.T.C. chairmanship.

Reinforcing Exceptional Measures

The special liaison machinery set up for this winter, it is emphasised, is designed to reinforce the exceptional preparations which the Railway and Road Haulage Executives have made both individually and in concert to minimise the effects of the labour shortage, to restore fluidity of freight movement during the summer, and to move the maximum tonnage during the winter; it does not in any way set up a duality of traffic control or operation, which remain the responsibility of the Transport Executives.

As regards British Railways, freight capacity measured by the present ton-mile figures is 30 per cent. over 1938, but it is calculated that the railways will be expected to lift about 5 million tons more traffic than last winter, with about 5 per cent. fewer staff. Nearly two-thirds of this increased load will be coal and the greater part of that concentrated in the weeks up to Christmas.

Year by year, it is pointed out, the freight load on British Railways is rising: by 347 million ton-miles in 1949; by another 125 millions in 1950; and already, in the first eight months of 1951, by over 376 millions again. Under such pressure, even some temporary congestion in one marshalling yard is bound to have wide repercussions on traffic approaching that point.

Emergency Action by British Railways

The measures adopted by British Railways as part of the special campaign to keep essential freight traffic moving include:—

(1) Up to 600 train crews a day made available for freight traffic working, through curtailment of summer passenger timetable.

(2) Extensive planned diversions of freight traffic from congested routes to alternative routes, as was done during the war, including some never previously used for trunk traffic.

(3) Intensive weekend freight working, nearly 450,000 tons of coal having been cleared each weekend recently.

(4) Reorganisation of major flows of traffic so as to make "block" loads for destinations, or for distant sorting centres, in order to avoid intermediate marshalling yards affected by staff shortages. The traditional boundaries or exchange points of the former railway companies, even where they exist today as between Region and Region, have been completely ignored in these diversions.

(5) Widespread re-arrangement of engine and train-crew workings, so as to transfer duties from depots which are short of staff, to others which can provide them.

(6) Transfer of 50 heavy freight engines from the N.E. and Scottish Regions to the Eastern, L.M., and Western Regions, enabling heavier trains to be worked.

(7) Reorganisation of the locomotive workings on the East Coast main line between King's Cross, Grantham, and York; this will yield 24 more engine-crews for freight working.

(8) Assisted lodging schemes for staff prepared to transfer to Birmingham and London Districts.

(9) The provision of additional railway hostel accommodation at Birmingham, Wolverhampton, London, Peterborough, Banbury, and Oxford is being urgently attended to.

(10) A campaign to avoid detention of wagons at goods terminals, including co-operation with traders in planning their loading and despatches and in prompt unloading of wagons. In particular, traders who work a five-day week will be pressed to clear wagons delivered to them for unloading on Saturdays.

Road Haulage Resources Deployed

The Road Haulage Executive, it was stated, has been making plans to deploy the total freight resources of British Road Services, with their 40,000 vehicles. Full advantage will be taken of the great flexibility of road haulage operation. At all levels, close day-to-day contact with British Railways has been established to ensure that road vehicles can be quickly diverted to points of pressure. To overcome difficulties created by the short supply of new lorries to the home market, vehicles taken over that would not normally be kept in service are being specially repaired so as to provide additional carrying capacity. The whole of the Executive repair resources, supplemented by those of outside repair contractors, has been mobilised for this purpose.

The London and Birmingham areas present exceptional problems in view of the large volume of traffic involved. Arrangements have been made for instituting road services between points within a 40-mile radius of those cities with the object of providing essential relief to selected railway marshalling yards which are likely to be congested. Traffic relief controls have been set up and these will work in day-to-day collaboration with the Regional and Divisional officers of the Railway and Road Haulage Executives. Where necessary, the Road Haulage Executive capacity will be augmented by sub-contracting of traffic by Road Haulage Executive District Managers to independent hauliers if they have vehicles available.

Difficulties Not General

In conclusion, it was stressed by Mr. Pope that it is essential to keep the outlook in proper perspective. Every winter some degree of congestion or hold-up has arisen both in public and private transport, and indeed in most operations conducted out of-doors. Secondly, unless the weather is particularly severe and widespread this winter, it is not thought that difficulty on the railways will affect more than a small proportion of all traffic carried, and then only by certain routes.

Conference on 50-cycle Traction, S.N.C.F.

Three-day meeting convened by the French National Railways, on single-phase traction at industrial frequency

As announced in previous issues, the French National Railways are holding a conference on 50-cycle traction, at Annecy, from October 12-15, which is being attended by a large number of delegates from railways and electric traction manufacturers, and there will be a comprehensive programme of papers and visits. British Railways will be represented by Mr. R. A. Riddles, Member, and Mr. S. B. Warder, Chief Officer (Electrical Engineering), Railway Executive.

On October 12, after the conference has been opened by M. Louis Armand, Director-General, French National Railways, in the Casino at Annecy, a series of general papers on 50-cycle traction, its technical problems and place in electric traction history, and the present state of research by the S.N.C.F. and manufacturers, will be delivered.

Inspection of Equipment

The afternoon will be devoted to an inspection of the fixed installations of the Aix-les-Bains—La Roche-sur-Foron line (experimentally electrified at 50 cycles), and of the following new prototype trial motive power:—

Locomotive with 50-cycle motors, CC 6051 (Oerlikon)
Locomotive with 50-cycle motors, CC 6052 (Alsthom)
Rectifier locomotive, BB 8051 (Alsthom)
Motor coach with 50-cycle motors, Z 9051 (Oerlikon)
Three-coach unit with 50-cycle motors, Z 9053-54, adapted in Germany under S.N.C.F. direction
Ignitron motor coach, Z 9055 (Westinghouse)

In addition, two 50-cycle locomotives from the Höllental line of the German Federal Railways will be shown:—

Locomotive with 50-cycle motors (A.E.G.)
Rectifier locomotive equipped with new single-anode rectifiers (Brown Boveri)

The inspections will be continued on the morning of October 13; in the afternoon, S.N.C.F. engineers will lecture on the installations on the La Roche-sur-Foron line, and power supply and the technique of motor equipment with 50-cycle, single-phase traction. Sunday, October 14, will be given over to a whole-day excursion, arranged by the S.N.C.F., probably to view the Genissiat hydro-electric project. On October 15, the morning programme will include lectures by engineers of electric traction manufacturers who will speak on commutation with single-phase, the rectifier and motors for half wave rectification, and the single-phase to d.c. converter locomotive under construction; after luncheon, S.N.C.F. engineers will be available to discuss with delegates subjects dealt with at the meetings and visits. Delegates will also be able to examine at Annecy Depot, 50-cycle motors which have been partly dismantled after service.

IRON & STEEL CONSUMERS' COUNCIL.—The Iron & Steel Consumers' Council, appointed by the Minister of Supply in the summer, held its first meeting on September 27. The council was welcomed by Mr. G. R. Strauss, Minister of Supply, who referred to the wide scope of the council's duties, as defined in Section 6 of the Iron & Steel Act, 1949, and emphasised the importance which the Government attached to its work. From a general discussion on future procedure it became clear that the Council could deal only with matters of general principle and it therefore thinks it desirable to point out that a consumer who meets with difficulty should approach his superior direct on any matter with which the supplier can deal. On more general matters such as the allocation scheme for steel, about to be introduced, he should on the other hand approach his sponsoring department, either direct or else through his trade association.

Passenger Charges Scheme, 1951

Inquiry by the Transport Tribunal: Opening of case for the British Transport Commission for higher fares

The inquiry into the draft British Transport Commission (Passenger) Charges Scheme, details of which were given in our April 20 issue and which aims at producing an additional £17 million in revenue over the whole country, was opened by the Transport Tribunal at Church House, Westminster, on October 8. The President of the Tribunal is Mr. Hubert Hull and the other members are Mr. A. E. Sewell and Mr. J. C. Poole.

Sir Malcolm Trustram Eve, K.C., in opening the case for the B.T.C., which it is expected will take some time to present, remarked that it was not the view of the British Transport Commission that its finances should be regarded with despondency. Trends of traffic and unexpected increases in costs had added heavily to the burdens of the Commission, and it could not refrain indefinitely from raising prices to its customers.

Rising Costs

From 1948 to the first quarter of 1951 identifiable jumps in costs had totalled £58½ million, or an average of £17½ million a year, and when smaller and more numerous, but not clearly identifiable, rises were added the total could be called £75 million.

Before the scheme could come into operation those figures must of necessity be higher. Some increases had occurred since March this year and others were on the way. The increases were out of the control of the B.T.C. and they had come at irregular periods on different services. They were far too large to be met by any savings of efficiency or economy.

During 1949, a partial wage and price freeze kept those identifiable jumps down to £2½ million, but during the year April, 1950, to March, 1951, the date when the present draft scheme was deposited, they totalled no less than £36 million, nearly two-thirds of the total of £58½ million mentioned for the 3¼ year period.

The general scheme intended that the interval between the rise in costs and the rise in charges should be financed out of reserves and that the new revenues would restore the reserves to their old level before the next rise in costs occurred, but so far the Commission had not been able to put anything to reserve.

The British Transport Commission had started operations just before a large increase in wages and improved staff conditions, and it was forced "into the red" at once. Until May, 1950, there had been many efforts to keep the accounts in balance through substantial increases in charges for goods by road and rail, and by economies in working the B.T.C. had nearly balanced its budget by May last year. Since then it had continued to improve efficiency and had obtained various increases in charges from various customers.

These measures again tipped the scale and nearly brought the Commission into approximate balance, although it was still without any margin for reserves or reducing past deficits. Again the costs had risen, and it was once more "in the red."

This could not go on, said Sir Malcolm Trustram Eve, and passengers must now be asked to pay more, for they were the one group which so far had not had to contribute anything substantial to the revenue. They submitted that every penny of the £10,900,000 asked for from the London area in the draft scheme last March could be shown to be more than justified by changes since the 1950 scheme.

The Commission was seeking to get a fair share from the many privileged people and classes outside London who for far too long had paid sub-standard fares on season ticket rates over the main-line railways. The London area would have to contribute more than the £10,900,000 that was asked for in the draft scheme if it was to pay its proper share of the costs.

The equality which had existed before the war between London and outside areas did not obtain under the scheme. If the draft scheme were accepted, the basic fare in London would be 1½d. a mile, while outside London it would remain at 2½d. a mile. The only equality would be in early morning fares and season ticket fares. The idea that London was paying more than other areas covered by the Commission had no foundation. If London Transport were again the London Passenger Transport Board it would still want the same money as was required by the scheme. The scheme had nothing to do with paying for other people. If he had submitted for passengers one common series of charges London would pay considerably more than it was being asked to pay now.

Freight Charges

Another question which had exercised a number of people was why a passenger scheme only was being submitted. The first point was that it was already overdue and events had already overtaken it. Railway freight charges were still extremely complicated and based on very old practices. They required extensive overhaul and a scheme for that was not yet ready. Road haulage services, on the other hand, were completely new, and not based on old practices. This was a section of the work of the B.T.C. which was still in the process of organisation.

Even if a freight charges scheme had already been deposited by August 6 it could not have come into effect in time to affect the accounts of 1952 and the present scheme could not affect the accounts of 1951. The B.T.C. could not possibly afford to lose £17 million waiting for it. Freight charges had, indeed, been twice raised since the B.T.C. started, first by 16⅔ per cent. and then by 10 per cent.

London increases last year were about 4 per cent., but, looking at all the passengers in this scheme, it only amounted to about 1½ per cent. or 4d. in the £. If the scheme were approved without alteration it would add another 13 per cent. to the yield. Every activity except passengers had had substantial increases.

Referring to wage increases between January, 1948, and April, 1951, Sir Malcolm Trustram Eve said that wages had gone up by £34¼ million. Large wage claims had recently been made and negotiations were in progress. Objectors might criticise the B.T.C. wages policy, but if they thought they paid too much, he hoped they would say so. "We say we pay neither too high nor too low."

The rise in costs had come at a time of falling passenger traffic. This was not true of freight traffic, which was reasonably buoyant. Statistics of passenger-miles were still very high compared with pre-war. Figures went up tremendously then and they had not come down to anything like pre-war levels. It was not anticipated that they would do so. The rise was still up by 39 per cent., although it was quite likely that they would not continue at that high level indefinitely.

In 3½ years there was a fall in receipts outside London of 13 per cent. without an increase in fares, and inside London a fall of 3 per cent. without any increase, except for a short period. In terms of journeys, there was a fall of 2½ per cent. in London and 2¾ per cent. outside London, again with no increase in fares except for a short period.

Capital expenditure would be required to produce major improvements in efficiency, and this was not under the control of the Commission except within its limited ration from the Government. The B.T.C. had in fact £200 million of unspent capital funds, and was not allowed to use it, and the present ration had to include overdue war renewals as well as war damage. They had in fact spent on these two items £50 million in the last three years. Under the present circumstances efficiency and efficient economy could only come by use of the present apparatus and much of that was over 100 years old.

A test of efficiency was that the cost per train-mile had declined over the 3¼ years by no less than 11 per cent. in spite of the rise in prices and costs. Surely *prima facie* a large undertaking in present circumstances must be fairly efficient if the expenditure under its control had gone down.

The Tribunal was asked to make some announcement as to the amount of general reserve the B.T.C. should aim at. The Commission suggested that it should be something of the order of 10 per cent. of gross receipts, which, on present receipts, would work out at about £50 million. This was the minimum which could promote some stability of charges and protect the finances of the Commission.

Renewal of Assets

When the inquiry was resumed on Tuesday, Sir Malcolm Trustram Eve continued the case for the British Transport Commission. He stressed the principle that revenue costs must include reasonable provisions for both short and long-term replacements and renewals of assets at current prices. Replacement values, he said, were considerably higher than original costs nowadays. Actually, at a special test made in 1950, that extra cost was estimated to be £14 million higher than the original cost, and it was known that the figure was somewhat higher now.

No provision was made whatever in the accounts to meet the higher prices for replacing those assets which would need to be paid when they were, in fact, replaced. In the view of the B.T.C., provision ought to be made for that purpose by way of approbation out of profits when they arose. There was a need, also, for more provision to be made for long-term assets—items which were either renewed piece by piece or reconstructed and modernised or else abandoned.

The B.T.C. had an accumulative deficit of £40 million which would be £50 million by the end of 1951. The problem was to turn this deficit into a surplus of about £50 million. Then there was a second problem, namely, to make some proper contri-

bution towards enhanced costs by replacing reserves.

The President said that, assuming when this scheme or whatever scheme came out of this inquiry came into operation early in 1952, and assuming that on that date there was an accumulative deficit of £50 million, it would mean that, according to the draft scheme, that deficit accumulated over four years should be cleared off in two and a half years. Was it not impossible to ask customers of 1952-1953 to make up to the B.T.C. what the customers of 1948-1951 left behind?

Sir Trustram Eve replied that, in theory, that was what he was asking for. It was in the long run in the interests of everyone of their customers that this should be done. Otherwise—unless something quite unexpected happened—there would have to be these perpetual applications to the Tribunal. Looking at the matter broadly, was it unreasonable that London should be asked to pay at the rate of £2 million a year as a share of a £50 million problem.

The Commission was asking for flexibility in its charges because it had to take "the skim of the milk as well as the cream." It was important for sound administration and public relations that each large transport group should, over a short period, make itself pay, and get the feeling that itself and others were pulling their weight.

Speaking of competition between road and rail services, Sir Trustram Eve said that a good deal had been said about the comparative cheapness of road as compared with rail, most of which was misleading. Where competition existed there must be as much flexibility in their charges and speed in changing them as possible. The present statutory procedure necessarily took time.

The present scheme could not now come into force to affect the accounts for 1951. To be really effective, it should be operated at least from the date of its deposit, but events had already overtaken it, and it was already out of date. This state of affairs must continue until the deficit was wiped out and a reserve created.

Accounts for 1950, in fact, showed an improvement over 1949 of a net £6,700,000. This improvement might have been great enough to avoid any deficit at all in the accounts of 1950 if the adjustments in charges which had now been approved were authorised earlier than they had been. Some delay was inevitable, but the extra time of the procedure proscribed by the statute and largely inevitable meant a loss of revenue, and was in itself a compelling reason for a larger general reserve than would otherwise be required.

Time Factor

The Commission was asking for £16,600,000 extra in the draft scheme in a full year. If it came in nine months later than the facts warranted it would add £12,000,000 on to the deficit. It added this burden, which was purely a statutory burden, on the passengers who would travel in the future, and it gave an uncovenanted benefit to the travelling of those nine months.

The Commission were asking the Tribunal to accept the general fare basis in this passenger charges scheme. This provided that no fare should be a fixed or standard fare; that the more the competition, the greater the flexibility to be allowed; and that fares should be fixed either as (*a*) a maximum fare, (*b*) a reasonable charge to be made by the Commission subject to subsequent complaint to be made to the Tribunal, or (*c*) charges at the discretion of the Commission. His fourth proposition was that, wherever possible, there should be "head-room" between the maximum fare authorised and the actual fare proposed to be charged.

The inquiry was adjourned until Wednesday.

Station Reconstruction at Heidelberg

Although nearly fifty years ago plans were made for the removal of the old station at Heidelberg to a different site, the work is still to be completed.

Apart from its considerable local traffic, Heidelberg is the junction of an important north-south line (Frankfurt-Basle) and an equally important west-east line (Mannheim-Stuttgart-Munich). For trains on the Mannheim-Munich line, Heidelberg is a through station, but Frankfurt-Basle trains must reverse. The position of the station in relation to the town is unsatisfactory. Originally built on the fringe of the old town, the station is now flanked by new districts giving rise to new urban traffic, much of which must cross the railway at level crossings which may be closed up to eleven hours out of twenty-four.

The obvious remedy is the removal of the station to a new site, about ½-mile further west, where a new layout will enable the Frankfurt-Basle trains to call at Heidelberg without reversal. The strip of railway land thus freed can be used for a high-capacity approach road, and the direct connection between the new districts in the north and south can be restored. Most of the earthworks and other preliminary works have already been carried out so that only 20 per cent. of the work remains to be done. It is considered that the new station will be brought into use in 1953.

The layout of the main building is governed by the fact that the new alignment of the railway and the approach road intersect at an angle of 45 deg. For that reason, the main frontage of the building is broken at an angle of about 130 deg. The longer part of the building lies parallel to the railway; the shorter, with the large booking hall, faces the approach road. The rail level is about 20 ft. below the street, and an overbridge connects the platforms with the main building.

The shorter wing, running north-south, will contain the booking hall, information kiosk, travel agencies, and a newspaper kiosk. The luggage offices are housed in the long block, close to the overbridge, where, because of the low level of the tracks, two lower floors will be available below street level. The luggage will be moved through special luggage tunnels and will thus not interfere with the flow of passengers; the tunnels will also be used for the conveyance of mail to and from trains. The south end of the long block will house, at ground floor level, the waiting rooms and station restaurant (including a quick-service buffet), lavatories, and bathrooms and hairdresser's saloon at basement level.

The two lower floors facing the railway will be used for the stationmaster's office and other operating premises, as well as a first aid post. The upper floors of the long block will house administrative offices and flats for railway staff. At a later stage, it is intended to add another wing with an hotel for 70-100 guests. In spite of deliberate austerity, the architectural aspect of the building is regarded as pleasant and satisfactory.

Staff & Labour Matters

Railway Wage Claim

The claims from the three railway unions for a pay increase for salaried and conciliation staff will come before the Railway Staff National Tribunal on October 19-24. The Chairman of the Tribunal will be Sir John Forster, K.C., who was Chairman of the Board of Conciliation set up by the Minister of Labour & National Service in 1949 to consider questions of railway pay and conditions of service; the Railway Executive nominee is Sir Graham Cunningham, a Member of the Economic Planning Board; and Sir Luke Fawcett, a former General Secretary of the Amalgamated Union of Building Trade Operatives is the nominee of the trade unions.

Conscription of Railwaymen

The railway manpower shortage was discussed at a meeting on October 5 of the Prime Minister, Mr. Hugh Gaitskell, Chancellor of the Exchequer, and Messrs. Alfred Barnes, Philip Noel-Baker, and Alfred Robens, Ministers respectively of Transport, Fuel & Power, and Labour & National Service. It is understood that deferment of military service for railwaymen was discussed, including the proposal referred to editorially in our August 10 issue, that conscripts should perform their military service, apart from a short period of basic military training, whilst serving on the railway. No official announcement has since been made.

London Busmen's Claim

Representatives of the T.G.W.U. on October 8 resumed their discussions with the London Transport Executive on the wage claim submitted on behalf of about 58,000 London bus, tram, and trolleybus workers. The result of the talks was reported to a delegate meeting of the union. Negotiations with the Executive are expected to continue shortly.

Dublin Port Strike

The port of Dublin is functioning normally after return to work last Saturday of 1,000 dock workers who had again struck. British Railways Holyhead-Dun Laoghaire service was not affected by the strike.

Contracts & Tenders

The Rhodesia Railways have placed a contract with Charles Roberts & Co. Ltd. for 250 four-wheel steel covered wagons.

The New South Wales Government Railways have recently placed contracts for boilers, which may be used on either "C35" or "C36" class locomotives, as follow:—

North British Locomotive Co. Ltd. ...	40
Vulcan Foundry Limited	45

The orders for new rolling stock amounting to $50,000,000, which, as recorded in our October 5 issue, have been placed by the Canadian Pacific Railway, will be divided as follows:—

Canadian Locomotive Co. Ltd.: Six streamline "A" diesel-electric units of 1,600 h.p.; six streamline "B" diesel-electric units.

General Motors Diesel Limited: Six streamline "A" diesel-electric units, eleven "B" diesel-electric units; three road switcher diesel-electric locomotives.

Montreal Locomotive Works: Six 1,000 h.p. standard diesel-electric switching locomotives; twelve 660 h.p. standard diesel-electric switching locomotives.

Canadian Car & Foundry Co. Ltd. : 1,000 50-ton box cars ; 300 50-ton motorcar wagons; 100 70-ton flat wagons; 25 50-ton baggage & express vans.

Eastern Car Company: 300 70-ton longitudinal hopper wagons; 300 70-ton drop-end gondola cars.

National Steel Car Corporation; 400 50-ton freight refrigerator vans; 350 50-ton box cars; 300 70-ton covered hopper wagons; 25 50-ton express refrigerator vans.

Canadian Pacific Railway Angus Works: 1,200 50-ton box cars.

The Western Region of British Railways has obtained authority for the purchase of a further 60 type "E" electric hammers for the consolidation of ballast under the timbers of point and crossing work, from Kango Electric Hammers Limited.

British Railways, London Midland Region, has announced that the following contracts have been placed:—

Leonard Fairclough Limited, London, S.W.1: widening bridge No. 14 carrying Abbots Avenue over the railway between Park Street and St. Albans Abbey Stations, for the St. Albans City Council.

Fletcher & Co. (Contractors) Ltd., Mansfield: part reconstruction of the Derby abutment of bridge No. 51 between Kimberley and Awsworth, on the Nottingham-Derby line: new substructure and filling for bridges 16 and 21 of the Stanton & Nutbrook branch on the Stanton & Shipley branch and extension.

Henry Hope & Sons Ltd., Birmingham; renewal of the roof coverings, stage two, the patent glazing of Euston down side carriage shed roof.

Mellowes & Co. Ltd., Sheffield: patent roof glazing of Liverpool Exchange Station roof.

Wolverhampton Corrugated Iron Co. Ltd., Ellesmere Port, Cheshire: re-covering Liverpool Exchange Station roof with R.P.M. "V" beam sheeting.

Notes and News

Public Transport Association Incorporated.—The 1952 Conference of the Public Transport Association Incorporated will be held at Torquay between May 6-8.

Vacancy for an Engineer.—An engineer, with experience in electric traction, is required by British Insulated Callender's Cables Limited, Prescot. See Official Notices on page 419.

Railway Students' Association. — The Annual Dinner & Dance of the Railway Students' Association will be held at the London Transport Executive (South Kensington) Club on the evening of November 28.

Vacancies for Draughtsmen.—Applications are invited for posts of draughtsmen, for electric and diesel-electric locomotive design, with Metropolitan-Vickers Electrical Co. Ltd., Trafford Park, Manchester. See Official Notices on page 419.

Assistant Distribution Manager Required.—Imperial Chemical Industries Limited, General Chemicals Division, have a vacancy for an assistant distribution manager, to be responsible for the provision and operation (excluding maintenance) of a large fleet of rail tank wagons and a mixed fleet of road tank wagons and platform vehicles. See Official Notices on page 419.

Road Haulage Association.—The programme for the Torquay Conference of the Road Haulage Association, which will be held between October 16-19, will be as follows:—Tuesday, October 16: Press conference, Victoria Hotel, 6 p.m. Wednesday, October 17: Business session at Torre Abbey, 10.30 a.m.-12.30 p.m.; business session at Torre Abbey, 2.30-4.30 p.m.; civic reception & ball at Marine Spa, 8 p.m. Thursday, October 18: Business session at Torre Abbey, 10.30 a.m.-12.30 p.m.; concours d'elegance of cars belonging to members, Torbay Road, 2.15 p.m.; brains trust, Torre Abbey, 4-5.30 p.m.; banquet and ball at the Grand Hotel, 7.30 p.m.

Muir-Hill Agents in Ireland.—E. Boydell & Co. Ltd., makers of Muir-Hill dumpers, have appointed J. H. Saville & Co. Ltd., Dublin, sole agents for the Republic of Ireland. J. E. Coulter Limited, Belfast, will continue to act as the representative of the firm in Northern Ireland.

Norwegian Electric Locomotives.—The 25 Bo-Bo locomotives to which we referred in the article "Progress of Electrification in Norway" in our October 5 issue, are being constructed by two firms: Norsk Elektrisk & Brown Boveri A/S, and Thunes mek. Værksted A/S, of Oslo.

Institute of Transport Anniversary Luncheon.—The Anniversary Luncheon of the Institute of Transport will take place on Wednesday, November 14, at 12.30 for 1 p.m., at the Connaught Rooms, Great Queen Street, W.C.2. Vice-Admiral Earl Mountbatten of Burma will propose the toast of "Transport," and Lord Brabazon of Tara will respond.

Increase in British Railways Coal and Steel Carryings. — During the weekend to October 8 British Railways cleared 382,650 tons of coal from deep-mined pits and opencast sites; this is the highest weekend clearance since June and makes a total of 3,206,070 tons for the week. The latest figures for iron and steel show that 205,719 tons were conveyed during the week ended September 29 from the principal steelworks; this also is the highest figure since June.

Petition Against Closing of Greenore Port and Railway.—A petition with a target of 50,000 signatures has been launched in Warrenpoint, Co. Down, against the proposed closing of the port of Greenore and the Dundalk Newry & Greenore Railway, referred to in our overseas column this week. The petition, sponsored by exporters and business interests, and backed by local bodies both north and south of the Border will call on British Railways to introduce a passenger and cargo service between Greenore and Holyhead. The work of collecting signatures will be handled by volunteers in the counties of Down, Armagh, Tyrone, Fermanagh, Louth, Monaghan, Cavan, Sligo, and Leitrim.

Fire at Chilean Station.—Fire broke out on October 5 at Baron Station, Valparaiso, Chilean State Railways. Its origin was traced to a railway van, loaded with solid paraffin. Flames spread to adjoining warehouses and millions of pesos worth of damage was caused. Buildings close to the seat of the fire and a number of railway wagons and their loads were destroyed.

Sunday Train Services from Dundee West Station.—As from October 7, Dundee West Station on the Scottish Region has been closed on Sundays and the trains advertised to start from or arrive at Dundee West are being dealt with at Dundee Tay Bridge Station. The arrangement is a revival of a prewar practice whereby the former L.M.S.R. trains were concentrated on Sundays at Dundee Tay Bridge Station (L.N.E.R.).

South African Railway Wage Settlement.—An agency message states that South African railway workers have accepted basic wage and salary rises totalling £6,000,000 a year, recommended by a conciliation board appointed by the Transport Minister. The settlement brought to an end a dispute between the South African Railway Administration and the Railway Artisan Staff Association which led to the workers starting a "go slow" strike three weeks ago. The settlement also provides for improved holiday conditions.

Eastern Region Art Exhibition.—An exhibition of oil paintings, water colours, and sketches by members of the staff of the Eastern Region of British Railways was opened to the public on October 10 and will close tomorrow, October 13; the hours of opening are noon to 7 p.m. and the exhibition is staged in Room 40 of the general offices at Liverpool Street Station. More than 400 entries were submitted from all grades, and with the advice of two well-known artists on selection and hanging, some 327 have been displayed. There

The Canadian Royal Train

Ten-coach train, composed of C.P.R., C.N.R., and Canadian Government owned rolling stock which is conveying Princess Elizabeth and the Duke of Edinburgh on their tour of the Dominion. (*see Overseas News*)

OFFICIAL NOTICES

JUNIOR TRAFFIC OFFICIALS with railway traffic apprenticeship experience. Age about 25, single, required for service on railways in Peru and Bolivia. Apply to the Secretary of the PERUVIAN CORPORATION LIMITED, 144, Leadenhall Street, London, E.C.3.

ENGINEER with experience in Electric Traction required by British Insulated Callender's Cables Limited, Prescot, to take charge of the preparation of layouts, arrangement drawings and estimates of materials required, for overhead equipment for trolley-bus schemes. Also to assist in the development of traction equipment generally. Permanent position with superannuation and bonus schemes after twelve months' probationary service. Applications, giving details of qualifications and experience should be made in writing to: THE STAFF OFFICER, B.I.C.C. LIMITED, Prescot, Lancs.

THE "PAGET" LOCOMOTIVE. Hitherto unpublished details of Sir Cecil Paget's heroic experiments. Eight single-acting cylinders with rotary valves. An application of the principles of the Willans central-valve engine to the steam locomotive. By James Clayton, M.B.E., M.I.Mech.E. Reprinted from *The Railway Gazette*, November 2, 1945. Price 2s. Post free 2s. 3d. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

IMPERIAL CHEMICAL INDUSTRIES LIMITED, General Chemicals Division, wish to appoint an Assistant Distribution Manager to be responsible for the provision and operation (excluding maintenance) of a large fleet of rail tank wagons and a mixed fleet of road tank wagons and platform vehicles. Candidates should have thorough knowledge of the law of inland carriage and railway practice, particularly in regard to the transport of dangerous goods, liquids in bulk, and heavy chemicals. The position also involves the control of transport accounts and a knowledge of modern materials handling methods is desired but not essential. Successful candidate will be appointed to the permanent staff with membership of Pension Fund, and will be located at Runcorn. Salary paid will depend on qualifications and experience, and excellent prospects exist for the right man. Applicants should send full particulars of their qualifications to Staff Manager, Imperial Chemical Industries Limited, General Chemicals Division, Cunard Building, Liverpool, 3.

RAILWAY MAINTENANCE PROBLEMS. By H. A. Hull (late District Engineer, L.M.S.R.). Valuable information. With much sound advice upon the upkeep of permanent way. Cloth, 8½ in. by 5½ in. 82 pp. Diagrams. 5s. By post 5s. 3d. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

WE buy used or unserviceable Steel Files at good prices, in lots of 2 cwts. or more.—THOS. W. WARD LTD., R.S. Department, Albion Works, Sheffield.

SENIOR DRAUGHTSMAN required with experience in the design of diesel electric locomotives. Men with sound steam and/or electric traction experience will be considered. Experience of bogie design would be an advantage. Please reply giving full particulars of training, experience and salary required to the General Manager, Brush Bagnall Traction Limited, Loughborough, Leics.

DRAUGHTSMEN required for electric and diesel-electric locomotive design. Previous experience in this class of work not essential. Good rates, working conditions and prospects of advancement to the right men. Apply in writing stating age, qualifications, experience, etc., marking envelopes "Traction Projects," to:—Personnel Manager, METROPOLITAN-VICKERS ELECTRICAL CO. LTD., Trafford Park, Manchester, 17.

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was a private viewing on October 9, when Mr. C. K. Bird, Chief Regional Officer, Eastern Region, performed the opening ceremony. He was accompanied by Mr. John Elliot, Chairman, and Mr. W. P. Allen, Member, the Railway Executive, and by senior officers of the Eastern Region.

Eastern Region Branch Line Closing.—British Railways announce that as from November 5 the passenger train service on the Louth and Bardney branch line will be withdrawn. Freight, livestock, and passenger train parcels traffic and enquiries will continue to be dealt with at Donington-on-Bain, East Barkwith, Hallington, Withcall, and Wragby. Kingthorpe and South Willingham Stations will be converted into delivery sidings. Buses operate in the area.

Removal of Railway Exhibits from the South Bank.—In the paragraph headed "Railway Exhibits Leave the South Bank" in the Scrap Heap page of our October 5 issue it was stated that "the large diesel-electric locomotive is being removed to the English Electric Co. Ltd. works." The locomotive, one of the 660-h.p. diesel-electric locomotives ordered by the Tasmanian Government Railways, is, in fact, being removed by road to the works of the Vulcan Foundry Limited at Newton-le-Willows, where it was originally designed and built by them in conjunction with the English Electric Co. Ltd.

Quality in Mass Production.—A team of specialists left England on October 9 under the auspices of the Anglo-American Council on Productivity to study methods of inspection in practice in American plants engaged in mass production. The team is led by Mr. L. Sollis, Managing Director, Highfield Gear & Engineering Co. Ltd. Such matters as the status of inspection departments in relation to other departments, the bearing of inspection on testing, the application of automatic jigs and fixtures, and the development of electronic tests are expected to be discussed by the team in its report.

British Railways International Ambulance Competition.—Scotland beat England by 21½ points in the British Railways International Ambulance Competition at Glasgow on September 26. Scotland gained an aggregate of 1,425½ points against the total of 1,404 by England and each country was represented by five teams. The competition was held at the headquarters of the St. Andrews Ambulance Association, and was presided over by Mr. T. F. Cameron, Chief Regional Officer, Scottish Region. Mrs. H. H. Halliday, wife of the Regional Staff Officer, Eastern Region, presented the prizes. Also taking part was Dr. H. H. Cavendish Fuller, Chief Medical Officer, Railway Executive. Over 500 spectators were present.

Eastern Region Stations Closing.—As from October 29 the following stations in the Eastern Region will be closed to passenger train traffic except for special excursions: Parkgate & Aldwarke, Tinsley, Unstone, and Treeton. Frequent road services are operating.

Landslide on Colombian Railway.—A Reuter report states that on October 5 a landslide hit a passenger train at Montenegro between Armenia and Pereira in Caldas Province, Colombia, causing the death of 26 persons and injuries to many others. The accident was believed to have been caused by the vibration of the train shaking down part of the mountainside already loosened by recent heavy rains.

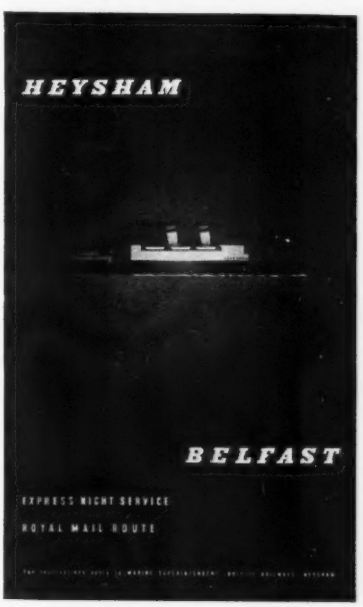
Improved Huddersfield-London Train Service.—An improved morning train service from Huddersfield to London has been provided by the North-Eastern Region, British Railways, in an additional train at 7.32 a.m. from Huddersfield to Wakefield Westgate, arriving at 8.5 a.m. to connect with the "West Riding," which leaves Leeds Central at 7.50 a.m. for Kings Cross. The 3.45 p.m. "West Riding," which leaves Kings Cross for Leeds, has a connection at 7.20 p.m. from Wakefield Westgate, calling at Wakefield Kirkgate and arriving Huddersfield Station at 8.2 p.m.

Metal Industries Limited.—Sir J. Donald Pollock, Chairman, stated at the recent annual general meeting of Metal Industries Limited that the trading profits and investment income of the group before depreciation totalled £1,120,356 including subsidiary company profit of £26,288 referable to previous years, against a total last year of £1,058,548. The charge for taxation a year ago was low by reason of substantial credits from previous years, and because of that and the Budget increases, they had had to provide £114,752 more this year, with the result that net profit came out at £408,179, against £476,218. They had allocated £200,000 to general reserve, and after making other provisions and paying the final dividend on the increased ordinary capital, they had a total of retained profit in the group to carry forward of £455,378, against £531,796. Important changes were an increase of £718,749 in the investment in ordinary stock of the British Oxygen Co. Ltd., and an increase of £134,770 in their total investment in subsidiary companies.

Scottish Region Best-Kept Gardens Result.—At the head of the list of winners in the best-kept-station gardens competition organised by the Scottish Region of British Railways are Kinross Junction and Aberdour Stations. Each gains a special "A" prize of £10. This is the fourth successive occasion a major award has been won; 300 stations were entered in the competition and the standard was very high.

Balloch Pier to be Rebuilt.—The existing pier at Balloch, Loch Lomond, which is constructed of wood, is to be demolished

An Original Poster Design



Poster designed by A. Games advertising the Heysham-Belfast service, L.M.R.

and replaced by a new structure of steel and concrete. It is announced by the Scottish Region of British Railways that work on the project is expected to commence in the near future and will cost about £15,000. The new pier is scheduled for completion in time for the Easter sailings next year. The firm of P. Caulfield & Co. Ltd. has been awarded the contract for the work.

Forthcoming Meetings

October 13 (*Sat.*).—Permanent Way Institution, Manchester & Liverpool Section. Visit to opencast coal sites near Atherton.

October 15 (*Mon.*).—Institute of Transport, at the Jarvis Hall (R.I.B.A.), 66, Portland Place, London, W.1, at 5.45 for 6.15 p.m. Presidential Address, by Mr. A. B. B. Valentine, Member, London Transport Executive.

October 16 (*Tue.*) to 19 (*Fri.*).—Road Haulage Association Annual Conference at Torquay.

October 17 (*Wed.*).—Institution of Locomotive Engineers, at the Institution of Mechanical Engineers, Storey's Gate, London, S.W.1, at 5.30 p.m. . Presidential Address on "The Inspecting Engineer's Contribution to Railway Economy," by Mr. J. S. Tritton.

October 17 (*Wed.*).—Railway Students' Association, London School of Economics, Houghton Street, Aldwych, London, W.C.2, at 6.30 p.m. Presidential Address, by Mr. C. K. Bird, Chief Regional Officer, Eastern Region.

October 17 (*Wed.*).—Institute of Metals, at the Park Lane Hotel, Piccadilly, London, W.1, at 10 a.m. General discussion on the subject of "Metal Economics."

October 17 (*Wed.*).—South Wales & Monmouthshire Railways & Docks Lecture & Debating Society, at the Angel Hotel, West Gate Street, Cardiff, at 6.30 p.m. "Modern Permanent Way & Methods of Handling During Renewal," by Mr. E. C. Cookson, Assistant Engineer (Permanent Way), Western Region.

October 18 (*Thu.*).—Diesel Engine Users' Association, at Caxton Hall, Westminster, London, S.W.1, at 2.30 p.m. "Test Methods for the Ignition Qualities of Diesel Fuels," by Mr. K. Arter.

October 18 (*Thu.*).—Institution of Mechanical Engineers, Annual Dinner at the Dorchester Hotel, Park Lane, London, W.1, at 7 for 7.30 p.m.

October 18 (*Thu.*)—.Western Region London Lecture & Debating Society, in the Clerks' Dining Club, Bishopsbridge Road, Paddington, London, W.2. "The Work of a Railway Chemist" by Mr. P. Robins, Assistant Chief Chemist, Swindon.

October 18 (*Thu.*).—Permanent Way Institution, London Section, at Railway Executive Headquarters, 222, Marylebone Road, London, N.W.1. "Construction & Maintenance as Seen on the U.S.A. Rail Roads," by Mr. A. Dean.

October 18 (*Thu.*).—Institute of Transport, Northern Ireland Section, at 21 Linenhall Street, Belfast, at 6 p.m. "Transport Publicity," by Mr. C. Grasemann.

October 19 (*Fri.*).—Institution of Mechanical Engineers, Storey's Gate, London, S.W.1, at 5.30 p.m. Presidential Address by Mr. A. C. Hartley.

Railway Stock Market

The pre-election uptrend in markets has made further progress in which nearly all sections have participated although individual gains were generally moderate. British Funds shared in the rise and particularly the 3½ per cent. War Loan and 3½ per cent. Steel stock. Hopes of a change of Government dominated sentiment which was hardly affected by the big fall in the sterling area gold and dollar reserves and the problems that lie ahead whatever Government comes to power after the election.

The City remains confident as to the election result and believes that dividend limitation will not go on the Statute Book. On the other hand it is realised that, because of rising costs and the growing difficulties in export markets, many companies will not be able to keep earnings at the good levels which ruled for 1950 when export market conditions were particularly favourable. Both Germany and Japan are expanding their trade in world markets and they are not burdened by the demands of a big rearmament programme. The inference is that numerous companies will find it difficult to maintain dividends at the rates paid for 1950.

Although markets have been buoyant the volume of business centred largely on overseas securities in which German and Japanese bonds were again prominent on expectations of favourable debt settlements early next year. Canadian stocks were also strong, largely owing to big demand from the Dominion which has resulted in stocks being in small supply in the market, and with London also a big buyer prices have gone ahead again.

Canadian Pacifics participated prominently in the uptrend and rose to 72½ accompanied by expectations of a higher dividend. Oil discoveries are expected to expand prosperity in Canada over the next few years, and in this the Canadian Pacific would participate, while in addition there is also the possibility of oil developments on its land holdings. In the circumstances Canadian Pacific 4 per cent. debentures at 91 offer an attractive yield for a high-class investment, and the 4 per cent. preference stock at 75 seems undervalued even allowing for the fact that the preference stock is non-cumulative as to dividend.

Antofagasta remained active with the ordinary up to 20 and the preference stock 77xd. Taltal shares were again bought and were up to 23s. Nitrate Rails were 25s. 3d. United Havana stocks receded in the absence of news regarding nationalisation. The 5 per cent. 1906 debentures were back to 19¼. Manila "A" debentures have been more active around 82 with the preference shares at 9s. 9d. Bolivar "C" debentures were 18 and La Guaira ordinary stock 92½. Brazil Rail bonds were 6½ and San Paulo 10s. units 15s. 9d. Mexican issues have remained prominent with Mexican Central "A" up to 83 and National of Mexico 4½ per cent. non-assenteds 45½. Leopoldina stocks were steady, but little business was passing; most holders have now decided to see matters through until the pay-out money can be distributed. The ordinary was 10⅛, the preference 26¼, the 4 per cent. debentures 91, and the 6½ per cent. debentures 139¼.

Road transport shares were steady with sentiment helped by the hope that road haulage would be returned to private enterprise. Southdown was 92s. 6d., West Riding 46s., Lancashire Transport 57s. 6d.xd, and Maidstone & District changed hands up to 61s. British Electric Traction stock was £475; the market expects a higher dividend next month if dividend limitation does not become law.

Engineering shares attracted more attention again on steel denationalisation hopes. Guest Keen were 62s. 6d., John Brown 51s. 7½d., and Vickers 51s., while T. W. Ward at 76s. 3d. have responded strongly to the results showing profits at the highest in the company' history; and although the dividend is restricted to 15 per cent. by limitation the directors have placed 5 per cent. to reserve for distribution at "an appropriate date." Babock & Wilcox moved higher at 80s. 3d. and Ruston & Hornsby were 39s. B.S.A. at 42s. 9d. reflected market hopes of a higher dividend next month if dividend limitation does not become law.

Locomotive building and engineering shares held firm again, with Vulcan Foundry at 27s. 3d., Beyer Peacock 33s. 9d., North British Locomotive 19s. Gloucester Wagon 16s. 4½d., Wagon Repairs 13s. 9d., and Charles Roberts 27s. Birmingham Carriage were 38s. 7½d. and at Glasgow, Hurst Nelson were 62s. 6d.

Traffic Table of Overseas and Foreign Railways

	Railway	Miles open	Week ended	Traffics for week: Total this year	Traffics for week: Inc. or dec. compared with 1949/50	No. of week	Aggregate traffics to date: Total 1950/51	Aggregate traffics to date: Increase or decrease
				£	£		£	£
South & Cen. America	Antofagasta ...	811	28.9.51	145,280	+ 55,390	39	4,616,980	+ 2,095,126
	Costa Rica ...	281	Aug., 1951	c1,295,820	+ c150,407	9	c2,568,670	+ c149,366
	Dorada	70	Aug., 1951	36,976	— 5,426	35	288,447	— 24,505
	Inter. Ctl. Amer....	794	Aug., 1951	$1,050,631	— $52,196	35	$9,022,027	— $204,818
	Paraguay Cent. ...	274	28.9.51	£333,601	+ £122,897	13	£4,319,142	+ £1,912,200
	Peru Corp. ...	1,050	Sep., 1951	$7,933,000	+ $91,000	13	$24,517,000	+ $1,070,000
	,, (Bolivian Section)	66	Sep., 1951	Bs.14,404,000	+ Bs.1,620,000	13	Bs.41,395,000	+ Bs. 10,886,000
	Salvador	100	July, 1951	c125,000	+ c20,000	4	c125,000	+ c20,000
	Taltal	147	Aug., 1951	$2,065,000	+ $528,500	9	$3,885,000	+ $1,086,600
Canada	Canadian National†	23,473	July, 1951	17,681,000	+ 895,000	30	117,434,000	+ 15,331,000
	Canadian Pacific† ...	17,037	July, 1951	11,932,000	+ 873,000	30	80,924,000	+ 10,763,000
Various	Barsi Light* ...	167	Aug., 1951	22,500	— 1,785	21	191,250	+ 31,920
	Egyptian Delta ...	607	10.4.51	17,513	— 267	4	17,513	— 267
	Gold Coast ...	536	Aug., 1951	220,509	+ 16,972	21	1,280,126	+ 109,832
	Mid. of W.Australia	277	July, 1951	46,474	+ 2,594	4	46,474	+ 2,594
	South Africa ...	13,398	8.9.51	1,865,197	+ 133,724	23	43,393,000	+ 5,647,821
	Victoria	4,744	Apr., 1951	1,793,401	+ 71,930	43	—	—

* Receipts are calculated at 1s. 6d. to the rupee † Calculated at $3 to £1